Abundance, Age, Size, Sex, and Coded-Wire Tag Recoveries for Chinook Salmon Escapements of the Campbell and Quinsam Rivers, 1999-2007

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ABUNDANCE, AGE, SIZE, SEX, AND CODED-WIRE TAG RECOVERIES FOR CHINOOK SALMON ESCAPEMENTS OF THE CAMPBELL AND QUINSAM RIVERS, 1999-2007

by

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ABSTRACT

Bennett, J., Lewis, D., Van Will, P., and Trenholm, M. 2010. Abundance, age, size, sex, and coded-wire tag recoveries for Chinook salmon escapements of the Campbell and Quinsam rivers, 1999-2007. Can. Manuscr. Rep. Fish. Aquat. Sci. 2935: ix + 213 p.

Chinook salmon (*Oncorhynchus tshawytscha*) escapement estimates were derived for the Campbell/Quinsam River system for 1999-2007 utilizing carcass tag and recovery methods as part of the Chinook key stream program. Petersen estimates of Chinook escapement for this period ranged between 6,694 in 2007 and 14,607 in 2001 for the combined system. These estimates include hatchery removals as well as Chinook transferred or permitted to move above the hatchery counting fence. Age-4 males and age-4 and -5 females dominated returns to both the Quinsam and Campbell rivers in all years assessed. Recovered returns of coded-wire tagged adult Chinook to the Campbell/Quinsam system ranged between 310 in 2003 and 991 in 2001 (including strays). In this study, escapement estimates were stratified by river, sex, age, and tag code. Hatchery contributions to strata were derived by expanding the actual number of coded-wire tag returns for each brood year and each tag code. From 1999-2007, hatchery contribution was estimated at 17.4-43.1% of the Campbell River escapement, 40.5-63.2% of the Quinsam River return and 77.0-87.5% of adults handled by Quinsam River Hatchery.

RÉSUMÉ

Bennett, J., Lewis, D., Van Will, P., and Trenholm, M. 2010. Abundance, age, size, sex, and coded-wire tag recoveries for Chinook salmon escapements of the Campbell and Quinsam rivers, 1999-2007. Can. Manuscr. Rep. Fish. Aquat. Sci. 2935: ix + 213 p.

Les échappées de saumons quinnats (*Oncorhynchus tshawytscha*) ont été estimées dans le réseau fluvial Campbell-Quinsam pour la période de 1999 à 2007 par marquage des carcasses et par récupération des marques, dans le cadre d'un programme de conservation du saumon quinnat (Chinook key stream program). Le nombre d'échappées estimées pour cette période à l'aide de la méthode de Petersen était de 6 694 en 2007 à 14 607 en 2001 dans l'ensemble du réseau. Ces estimations comprennent les prélèvements d'écloseries et les saumons quinnats transférés ou libres de circuler au-delà de la barrière de dénombrement. Les mâles de 4 ans et les femelles de 4 et 5 ans étaient dominants dans les remontées des rivières Quinsam et Campbell durant toutes les années de l'étude. Le nombre de saumons quinnats adultes recapturés portant des micromarques codées dans le réseau Campbell-Quinsam (y compris les saumons errants) était de 310 en 2003 à 991 en 2001. Aux fins de la présente étude, les échappées ont été estimées par rivière, par sexe, par âge et par code de marque. La contribution des écloseries à chacune de ces strates a été calculée en appliquant un facteur d'extension au nombre réel de retours de poissons portant des micromarques codées pour chaque année de ponte et pour chaque code. On a estimé que, de 1999 à 2007, la contribution des écloseries représentait environ 17,4 à 43,1 % des échappées dans la rivière Campbell, 40,5 à 63,2 % des retours dans la rivière Quinsam, et 77,0 à 87,5 % des adultes manutentionnés à l'écloserie de la rivière Quinsam.

INTRODUCTION

One of the primary goals of the long-term management plans of Fisheries and Oceans Canada (DFO) is the restoration of Pacific Chinook salmon (*Oncorhynchus tshawytscha*) stocks to historic levels. The Campbell and Quinsam rivers were chosen for study as important "key streams" which represent the overall status of Chinook bearing streams along the British Columbia coast. These indicator systems provide ongoing information to fisheries managers in response to artificial (hatchery) and natural production, and harvest management strategies. This key stream program began in 1984 in accordance with objectives set out in the Canada/U.S. Salmon Treaty.

The major program objectives are:

1. to accurately estimate Chinook escapement on key streams;

2. to estimate harvest rates and contributions to fisheries and escapement based on coded-wire tagged returns, including estimates of the total escapement of coded-wire tags to key stream systems; and

3. to estimate the contribution of hatchery and natural production to the escapement.

Chinook escapements to the Campbell River have ranged from 750 to 8,000 since 1947 (Shardlow et al. 1986), but were negligible in the Quinsam River prior to establishment of the Quinsam River Hatchery. Built in 1972 (first releases from 1974 brood year), this facility located 3.7 kilometres up from the confluence with the Campbell River, enhances anadromous salmonid species native to the Campbell and Quinsam systems.

Total adult (age-3 and older) Chinook returns to the Quinsam River (including brood stock removal by the hatchery) ranged from approximately 2,700-3,800 in the 1984-1987 period. Abundance steadily increased in the following years to a peak of approximately 12,800 in 1990, before plummeting to a low of approximately 1,800 in 1995. An increasing trend was again demonstrated in the 1997-2001 period, peaking at approximately 13,700 in 2001, and dropping slightly in 2002 to 11,800. In recent years, total escapements to the Quinsam River have fluctuated in the 6,000-9,000 range (Figure 1).

In the 1984-1991 period, Chinook escapements to the Campbell River ranged from approximately 1,300-5,000 adult spawners but have varied between 250 and 1,400 spawners in subsequent years (Figure 1).

Chinook returns referenced for the 1984-1998 period may differ slightly from values reported in previous publications for these systems. Historic escapements were updated based on Quinsam Hatchery archival data to maintain consistency in stratification by sex and river location.

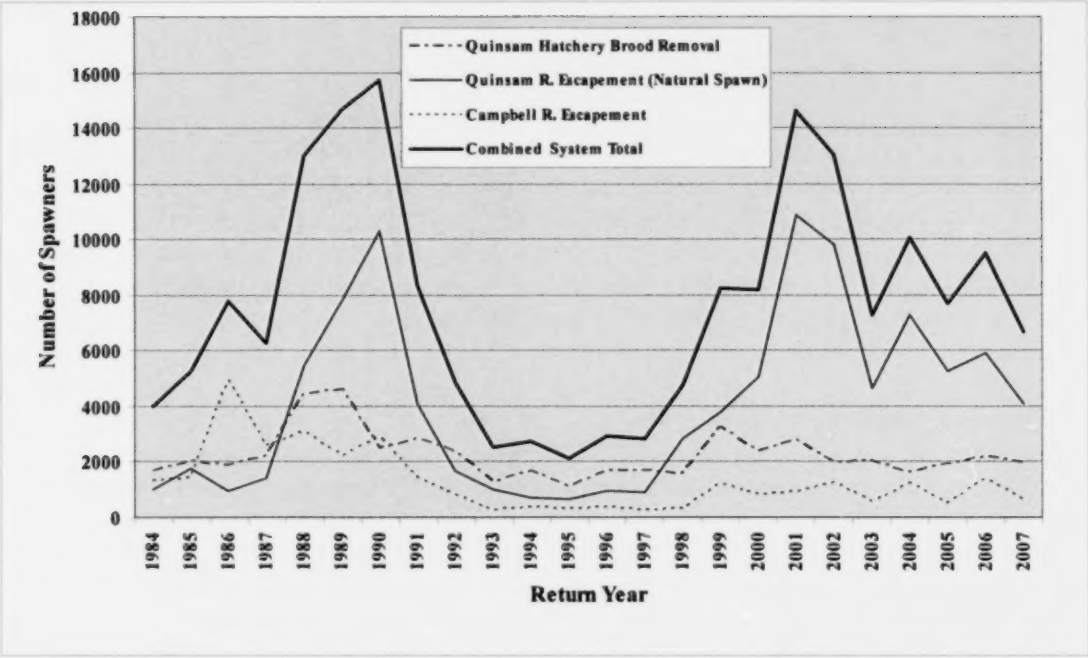

Figure 1. Chinook adult escapement estimates stratified by river location, for 1984-2007.

The objective of this document is to provide Chinook salmon escapement estimates for the Campbell/Quinsam River system based upon the adjusted Petersen method of population estimation (Ricker 1975; Seber 1982), utilizing tagged and recovered carcasses. In combination with Petersen estimates, coded-wire tagged (CWT) adult returns are used to estimate total CWT and hatchery contribution to river escapements.

Frith and Nelson (1994) discussed possible biases in Petersen estimate, carcass tagging, and stratification methodologies, and Frith and Nelson (1995) described the assumptions necessary for the methods, and tests for biases caused by violations of these assumptions. This information has been revised and repeated for the readers' benefit in the methods section, which also includes descriptions of the tag and recovery effort, biological sampling, and formulas utilized in escapement and CWT expansion estimate calculation. Presented in the results section are tag and recovery rates, population estimates, age, length, and sex composition, and coded-wire tag returns.

For the purposes of this report, 'tagging' means the attachment of a staple tag to the operculum of a deceased, spawned out Chinook salmon. 'Marked' fish refer to those returning adults lacking an adipose fin and presumably carrying a CWT applied during their juvenile stage prior to release from the hatchery.

STUDY AREA

In order of abundance, species of Pacific salmon that inhabit the Campbell/Quinsam system include: Pink (*O. gorbuscha*), Chum (*O. keta*), Chinook, Coho (*O. kisutch*), and Sockeye (*O. nerka*). Steelhead trout (*O. mykiss*) and Cutthroat trout (*O. clarki*) are also resident.

The Campbell River watershed drains an area of 1,461 km^2 with its headwaters originating in the mountain ranges of east-central Vancouver Island, and mouth emptying into Discovery Passage, within the city limits of Campbell River, British Columbia (Figure 2). The historic course of the river has been impounded by a series of three dam and reservoir systems (John Hart, Ladore, and Strathcona Projects) as well as receiving diverted waters from other creeks and rivers (Crest, Heber, Salmon, and Quinsam) and has been a source of hydroelectric power by BC Hydro since 1947 (Anderson 2007; Burt and Burns 1995; Burt 2004).

The John Hart Project (lowest in watershed) is comprised of the John Hart Dam, Reservoir, and Generating Station, and includes three penstocks which transport water from the reservoir to the generating station below, located at the bottom of Elk Falls Canyon (Burt 2004). Campbell River flows are controlled by this generating station, which in the past have varied from 1.2 to 826.0 m^3s^{-1}, with a mean of 96.0 m^3s^{-1} (Marshall et al. 1977).

The current flow regime of the Campbell River is now governed by a collaborative agreement between BC Hydro, DFO, B.C. Ministry of Environment (MoE), and other stakeholders. The impetus for this agreement was in response to substantial damage that occurred to the Second Island Channel in 1995, a result of spillage from John Hart Dam following a period of prolonged rainfall coupled with snowmelt. This agreement establishes a flow regime tailored more to salmonids, mimicking historic flow patterns prior to the impoundment of the river and takes into account the life stage requirements of the various species that inhabit the Campbell. Power production needs, recreational water levels, and flood management; including minimizing spills and potential damage to downstream fishery habitat restoration projects, are also parts of the agreement. Target flows now range between 34 and 122 m^3s^{-1} (Campbell River Hydro/Fisheries Advisory Committee 1997).

Despite its large size, the Campbell River watershed affords only 6 km of available habitat to anadromous salmonids; 4.2 km from the mouth of the river to the tailrace at John Hart Generating Station and 1.8 km in Elk Falls Canyon (between the generating station and the falls). Prior to 1997 this canyon area was essentially dewatered other than minor dam leakage and during spill events, only sporadically providing access to salmonids. It now receives a continual release as part of the collaborative flow agreement (Burt 2004).

The natural recruitment of spawning gravel from higher reaches of the Campbell system has been blocked for decades, a consequence of river impoundment, and coupled with higher flows in the river mainstem, significant depletion of suitable spawning substrate has occurred. Since 1995, restoration projects have focussed on improving Chinook spawning and rearing habitat; including the placement of gravel in areas historically used by Chinook, as well as the creation of a number of side channels.

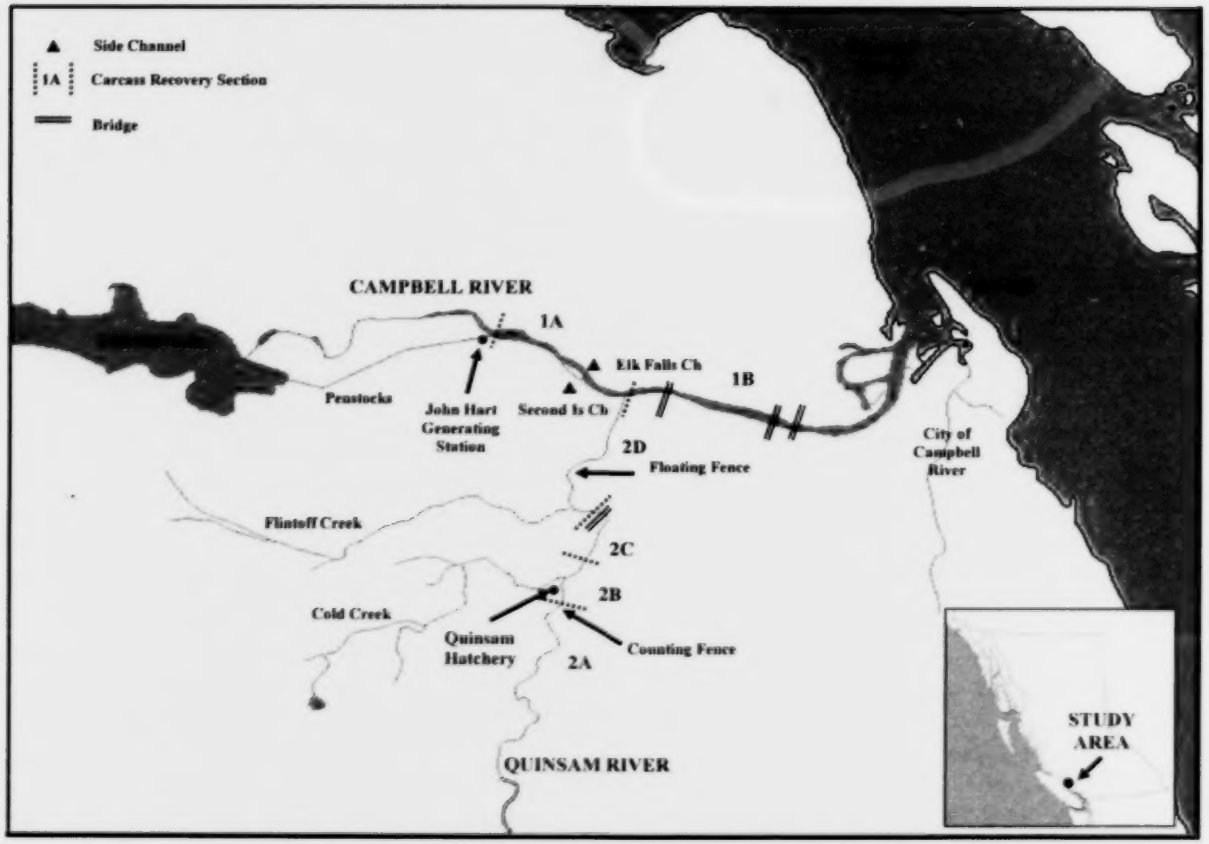

Figure 2. Map of the Campbell and Quinsam rivers study area.

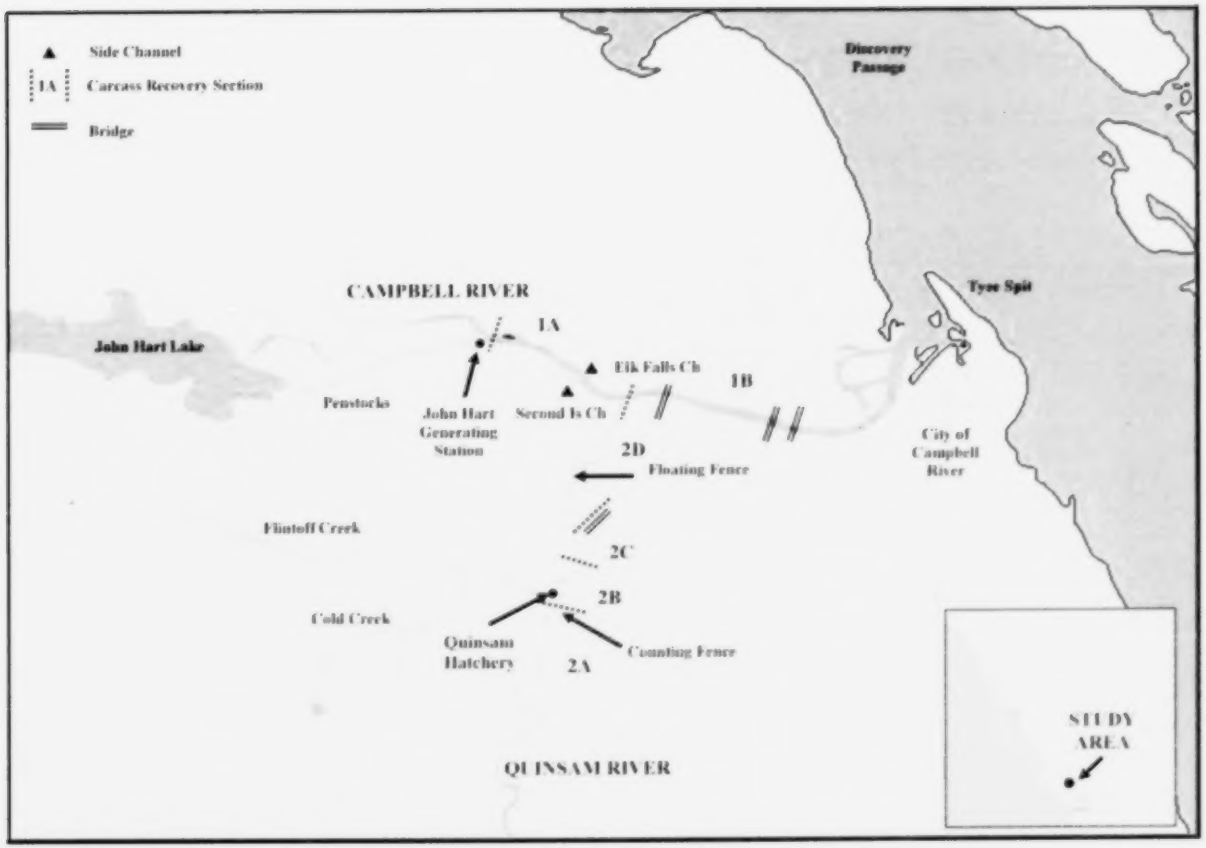

Figure 2. Map of the Campbell and Quinsam rivers study area.

Spawning gravel is limited in the canyon, but has been augmented there as well (Burt 2004).

The Quinsam River, the major tributary of the Campbell River, originates at Upper Quinsam Lake and drains a watershed of 265 km^2. The river flows for over 30 km through a series of small lakes, and is fed by numerous tributaries to the south of the Campbell watershed, including the Iron River, Cold and Flintoff creeks, before entering the Campbell River 3.5 km from the estuary (Figure 2) (Andrew et al. 1988). A diversion dam situated above Middle Quinsam Lake directs water from the Quinsam River into the Campbell lakes' reservoirs when required for hydroelectric generation purposes; minimum flow rates are maintained in the river during dry periods. Daily flows near the mouth of the Quinsam River in 1999-2007 ranged between 1.2 and 81.1 m^3/s^{-1} while mean monthly flows ranged between 1.4 and 27.8 m^3/s^{-1} (Environment Canada, Water Survey of Canada, accessed February, 2009).

In 2005, a series of pools and weirs were cut into two sets of sandstone rock cascades of the Quinsam River (located approximately 10 and 14 km from the confluence) allowing passage at low summer flows to pinks and other species, and access to 14 km of spawning habitat. The nutrients released from the increased biomass of carcasses in this portion of the river, have the potential to create productive early rearing habitat for Chinook, Coho, and Steelhead (Shannon Anderson, DFO, pers. comm., 2008).

The upper watersheds of both the Campbell and Quinsam rivers are impacted by logging and mining industries and the resulting network of roads provide access for extensive recreational use of these areas. Commercial activities in the Campbell River estuary have included log booming, sawmill operations, shake mills, floatplane facilities, and recreational boat moorages (Andrew et al. 1988). The period of 1999-2007 has seen a decrease in industrial usage of the estuary as a result of downturns in the local economy and a planning framework that included the creation and implementation of the Campbell River Estuary Management Plan and the purchases of the Baikie Island Reserve led by the Nature Conservancy of Canada and the Tyee Spit by the City of Campbell River. Estuarine habitat projects in the Campbell River have included construction of intertidal islands (Levings et al. 1986), marsh benching, back channels, and improved habitat connectivity (Shannon Anderson, DFO, pers. comm., 2008).

Mature Chinook begin returning to the Campbell River in mid August with the migration peaking in October. Spawning occurs over several weeks from mid October to mid November. Chinook enter the Quinsam River system in early October, peak in late October, and finish spawning by late November. A portion of the returning Chinook run is enumerated through the counting fence at Quinsam Hatchery and transported above the fence by hatchery staff, allowing them access to upper river spawning areas. Although 27 km of the Quinsam River are accessible to them, the majority of Chinook spawn in the lower 4 km of the river. Coho routinely spawn in the Second Island Channel on the Campbell, but primarily utilize the Quinsam River. Chum spawn in the lower reaches of both the Campbell and Quinsam rivers. Pinks primarily utilize the Quinsam River, but spawn in the lower reaches of the Campbell River as well.

METHODS

POPULATION ESTIMATION

Chinook salmon escapement estimates were determined for the Campbell and Quinsam rivers with the adjusted Petersen method (Ricker 1975; Seber 1982), using carcass tagging and deadpitch recovery techniques. The estimates derived were then combined with hatchery brood stock removal numbers, adults transferred to the Elk Falls Channel, and those enumerated through or transported above the counting fence, to produce a total escapement estimate for the combined system.

Population Stratification

Petersen estimates were stratified by sex and river and then summed to obtain an estimate of the entire population. By segregating the data into separate population strata, potential biases; due to differential rates of tag application, recovery of carcasses, and tag loss were minimised (Andrew et al. 1988). Petersen estimates were generated for the Campbell River, from John Hart Generating Station to the estuary (sections 1A, 1B, and Second Island Channel) and for the Quinsam River, from the hatchery counting fence (permanent structure) to its confluence with the Campbell (sections 2B-2D) (Figure 2).

Potential Biases in Carcass Tagging and Recovery

Within a stratum, Petersen estimates using carcass tagging may be subject to bias depending on the extent to which a number of assumptions are violated (Andrew et al. 1988; Bocking et al. 1990).

Tests used to evaluate bias of the Petersen estimate in this study are presented and discussed below. Certain biases caused by methods of tagging, recovery, and age determination are discussed in subsequent sections.

Assumption 1. Tags are applied in proportion to the available population; and the distribution of recovery effort is proportional to the number of fish present in each river reach.

To obtain an accurate Petersen estimate, tags must be applied and recovered in proportion to the available population. During the years 1999-2007, carcasses were tagged in situ during examination. Staff attempted to staple tag a consistent proportion of the number of fish encountered during each recovery survey. On average, one out of every two carcasses was staple tagged on the Campbell River and, dependant on abundance, one out of every three to ten carcasses was tagged on the Quinsam River. A higher tag rate was applied when the number of carcasses examined in a day was low. The percentage of encountered carcasses tagged over the study periods ranged from 39.1-87.5% on the Campbell River, and 9.7-52.0% on the Quinsam River (Appendix 17 and 18).

Assumption 2. There are no (minimal) additional die-offs of spawners after the conclusion of tagging.

An addition of new carcasses following tagging could cause Petersen calculations to overestimate or underestimate the true population depending on how they mixed with tagged fish. Tagging and recovery continued in the rivers every 1-8 days during the spawning and die-off period, through to the end of November or early December.

Assumption 3. There is no tag loss.

A high incidence of staple tag loss will cause Petersen calculations to overestimate the true population. Tag loss was determined by a secondary mark (opercular hole punch) to all tagged carcasses. A single hole punch to the right operculum was used to represent carcasses tagged on the Quinsam River while a single hole punch to the left operculum represented carcasses tagged on the Campbell River. Carcasses recovered with this secondary mark only were included in the tag recovery data and Petersen estimates.

Assumption 4. All tags are recognized and reported during recovery after the conclusion of tagging.

In this study, no duplicate pitches were conducted to re-examine carcasses for missed tags and secondary marks. Therefore it was not possible to evaluate the validity of this assumption.

Assumption 5. Recovery efforts are made on the same population that was tagged.

Dead recovery from a population other than the tagged population will cause Petersen calculations to overestimate the true population. Indicators that tagging and recovery were conducted on different populations include different age and length frequency distributions among the two samples. Since tagging occurred concurrently with recovery, this is an unlikely source of error.

Chinook enumerated by the hatchery and transported above the counting fence on the Quinsam River were double hole punched in the right operculum. In the event they passed through the fence during panel openings or high water events they could be distinguished and not recounted in the lower river assessment.

A related problem associated with calculating separate escapement estimates for a combined system, is that tagged carcasses may stray (washout) between rivers. However apart from passive transfer by water flow, carcasses are not subject to movement in the same way as live fish. The study data reflected that the occurrence of staple tagged washouts between the Quinsam and Campbell was low, and those encountered were reassigned back to the appropriate river.

Assumption 6. There is adequate sampling to provide an accurate and precise population estimate.

A small number of tag recoveries in a stratum will cause Petersen estimates to have low precision. Petersen estimates are generally more reliable if a high proportion of tagged fish are recovered in each stratum. In the absence of other sources of bias, the number of recoveries required to achieve a +/-25% accuracy with 95% confidence for populations (10^2 to 10^9) ranges from 25 to 75 (Ricker 1975). Based on the Petersen population estimate sample size chart with 25% accuracy (Robson and Regier, 1964), an appropriate combination of carcass tagging and examination was carried out for the Campbell/Quinsam system at current escapement levels, and tagged carcass recoveries were 25 or greater in all strata.

Jacks (age-2) were insufficient in number in deadpitch surveys to satisfy this assumption (Appendices 17 and 18). During the period 1999-2007, only 3 jacks were encountered on the Campbell River, one of which was staple tagged but not recovered; on the Quinsam River, 61 jacks were encountered, 16 staple tagged and 4 recovered.

Assumption 7. Tagged carcasses are representative of the population and behave in a similar manner to untagged carcasses with respect to buoyancy, visibility, and decomposition. Tagged and untagged carcasses mix randomly.

Tagged carcass recoveries will not be representative of the population if they behave differently than untagged carcasses, and thorough mixing between carcass types does not occur. Incomplete mixing may introduce bias causing the Petersen method to overestimate or underestimate the population. Buoyancy and decomposition may be important factors causing differential behaviours, especially if tagged carcasses become bloated with air during handling. Differences in tag visibility could cause preferential sampling of tagged carcasses and result in an underestimate of the population. An attempt was made to circumvent this problem using neutral coloured tags to prevent increased visibility. In addition, survey teams alternated their coverage of areas to reduce the incidence of carcass placement "memory".

It is not possible to test the assumption of similar visibility between tagged and untagged carcasses with the data from this study. Similar buoyancy and decomposition of tagged and untagged carcasses could be tested by comparing the in-river tag recovery rate with the recovery rate at carcass weirs if such data were available. The assumption of carcass mixing cannot be tested with the 1999-2007 data, however has been addressed in the 2008 and 2009 programs.

Calculations

The adjusted Petersen estimate of each river stratum and sex was calculated as follows (Chapman's formula; Ricker 1975; Seber 1982):

$$P_{i,r} = \frac{(C_{i,r}+1)(M_{i,r}+1)}{(R_{i,r}+1)} - 1 \qquad (1)$$

where P is the population estimate, C is the total number of fish examined (including tagged recoveries), M is the total number of fish tagged, and R is the number of tagged fish recovered and includes fish with missing tags (secondary marks only). The subscript i is the sex stratum and the subscript r is the river stratum.

Population estimates for sex and river (carcass tagging only) strata were summed to obtain a total in-river population estimate:

$$P_t = \sum_{i=1}^{n} \sum_{r=1}^{m} P_{i,r} \qquad (2)$$

where n is the total number of sex strata and m is the total number of river strata.

Confidence limits were obtained for each stratum assuming a normal population distribution (Seber 1982). Stray Chinook (based on CWT recoveries) were included in adult counts, but estimates were not calculated for jacks as very low numbers are encountered in deadpitch surveys each year (see Assumption 6).

Program performance was assessed by determination of percent standard error of the Petersen estimate for each river system.

CARCASS TAGGING AND RECOVERY

Carcass tagging was conducted in tandem with the dead recovery effort. This enabled tagging to be spread evenly throughout the recovery period (Appendices 15 and 16).

All carcasses encountered were examined for the presence of a staple tag, opercular hole punch, or absence of the adipose fin. Adipose clipped fish were excluded from the tagging portion of the study as their heads were required for CWT retrieval purposes. A representative number of unmarked carcasses on each river were staple tagged, hole punched, sampled, and then replaced in the same location, or as close as possible, to where they were found. Once enumeration and sampling requirements were satisfied for adipose clipped, untagged, and recaptured-tagged carcasses, they were cut in half by machete to prevent being recounted in subsequent surveys.

Crews of two to nine technicians conducted the daily carcass tagging and recovery surveys (Appendix 1). They were instructed to enumerate all available carcasses encountered, record requisite data, keep recovered staple tags, and to distribute their effort evenly throughout the study period including alternating teams in riverbank coverage within and between systems. The Campbell and Quinsam rivers were surveyed for Chinook carcass recoveries by two methods:

1. Crews searched the banks and shallow reaches of the rivers and side channels on foot and the lower reaches of the Campbell River (from the highway bridges to the

estuary) by jet boat.

2. A diver searched for carcasses in deep pools of the lower reaches of the Campbell River and Second Island Channel (1999 and 2000 only).

Chinook were also recovered at the Quinsam Hatchery rack (at the hatchery site) and from a floating fence operated in area 2D of the Quinsam River (Figure 2). The floating fence, used by the hatchery to retain Chinook for adult broodstock capture, is normally installed at the beginning of October and removed in early December. Carcasses that collected on this fence were removed and placed on the downstream side of the fence or on the river bank after being staple tagged and sampled. In the fall of 2007 unseasonably high river flows prevented the floating fence from being installed, hampering in-river brood stock capture activities and carcass retention.

At low flows most of the Quinsam River could be surveyed for carcasses, however on the Campbell River and in high water or turbid conditions on the Quinsam, the majority of tagging and recovery work occurred from the river banks.

For Petersen estimate calculation, carcasses examined on or before the first day of tagging per stratum, or those tagged and recovered on the same day, were not included in the values of C and R. It was assumed that a span of 24 hours was required between tagging and recapture for sufficient mixing of tagged and untagged carcasses to occur.

Other calculations relating to the dead recovery were as follows:

$$tag\ rate = R / C \tag{3}$$

where *tag rate* is an estimate of the proportion of the population that was tagged.

$$tag\ recovery\ rate = R / M \tag{4}$$

where *tag recovery rate* is the proportion of tagged fish that were later recaptured, and is an estimate of the proportion of the population that was encountered during the carcass survey.

BIOLOGICAL SAMPLING

Biological sampling was conducted during the tagging procedure and at the hatchery rack. Data collected from unmarked fish included: sex, presence of secondary marks (opercular punches) and a predetermined number of postorbital-hypural (POH) lengths and scale samples randomly selected from each sex. In addition, paired otoliths were retrieved from a defined number of carcasses for thermal mark analysis. All adipose clipped carcasses were sampled for sex, POH length, and their heads removed.

Scale samples were taken in conjunction with length measurements. A scraping of scales was placed in a labelled envelope and individual scales from each fish were later mounted in scale books by hatchery staff. Ageing of scales was conducted by the DFO Ageing

Lab at the Pacific Biological Station in Nanaimo, B.C.. Otoliths, stored dry in small vials, were later processed and read by technicians. CWT extraction and decoding was performed by J.O. Thomas and Associates in Vancouver, B.C..

Ageing data were accepted on the premise that the scales contained a portion of the previous annulus and were not regenerated. Scales were rejected at the ageing lab if they were mounted upside down, resorbed, or had regenerate centres. Ages were recorded for fish where at least two of the five scales submitted could be read for both marine and freshwater ages. The ageing system in this report follows methodology originally described by Gilbert and Rich (1927). For the purposes of this report only total ages were reported.

The age composition determined with the available samples is valid only if sampling was random and there was no bias in readability of scales with age. Ages of older fish are usually more difficult to read than those of younger fish because their scales undergo more resorption and regeneration. The data were examined for this potential and very few unreadable scales were encountered each year of the study.

Age structure of Campbell and Quinsam River Chinook populations was determined by allocating portions of their Petersen estimates according to the age composition determined from scale samples and CWT decoding. Since the number of jacks was too small to estimate population size with accuracy, escapement by age was determined for adult males (age-3 and older) and females only.

Sex ratio was determined from Petersen estimates for each river. The test for potential differences in tag loss is described in the tagging methods section. Tag recognition is not likely to be biased by sex, although it was not possible to test this potential bias with the data in this study.

CODED-WIRE TAGGING AND RECOVERY

Juvenile Chinook were adipose fin clipped and marked at the Quinsam Hatchery with either binary coded-wire tags as described by Jefferts et al. (1963) or decimal coded-wire tags, using standard methods (Armstrong and Argue 1977).

Estimates of the contribution of hatchery-reared Chinook to the total escapement were calculated by expanding the percentage of CWTs in escapement counts by tag code. The number of successfully decoded CWT Chinook in the escapement was estimated and stratified by river and sex using the methods described for the Mark Recovery Program (Kuhn 1988). This method is currently used by DFO to estimate hatchery contributions in commercial and sport Chinook catches. All stray Chinook (tag codes from other systems) were included in the calculation of hatchery contribution, however U.S. tag codes were not expanded (Roberta Cook, DFO, pers. comm., 2010), the observed numbers were used.

Estimation of the total number of CWT returns from each of the brood years, and for each tag code, was done as follows:

First, the observed number of CWT recoveries was adjusted to account for "no pin" (adipose missing but no CWT in nose) recoveries:

$$ADJ_{i,r,tc} = OBS_{i,r,tc} \bullet [1 + \frac{LP}{K} + \frac{ND \bullet (K + LP)}{K \bullet (K + LP + NP)}] \quad (5)$$

where *ADJ* is the adjusted number of observed CWT fish, *OBS* is the observed number of CWT fish, *K* is the sum of all successfully decoded tags for all tag codes recovered, *LP* is the number of lost pin recoveries, *ND* is the number of no data recoveries, *NP* is the number of no pin recoveries, and *i*, *r*, and *tc* are the subscripts denoting sex, river, and tag code, respectively.

This adjusted number of CWT recoveries was then used to estimate the total number of CWT returns for each tag code:

$$EST_{i,r,tc} = \frac{ADJ_{i,r,tc} \bullet P_{i,r}}{C_{i,r}} \quad (6)$$

where *EST* is the estimated number of CWT recoveries for a single tag code, *C* is the total number of fish examined, *P* is the population estimate, and *i*, *r*, and *tc* are subscripts denoting sex, river, and tag code.

This approach of estimating the number of CWT Chinook in the escapement assumes that any adipose clipped Chinook found without CWTs were never marked. This assumption is only valid if Chinook tagged with a particular tag code did not lose the CWT after release from the hatchery (i.e. after accounting for tag loss during a retention test). Since 90% of tag loss occurs within four weeks of tagging (Blankenship 1990), any fish released within this four-week period are more susceptible to tag loss prior to being recovered in the fishery or escapement. Violation of the assumption of no tag loss will result in a negative bias in the estimates of hatchery contribution and survival rates, but a positive bias in estimates of exploitation rates. Other potential sources of bias using this method are discussed in Bocking (1991).

Hatchery Contribution

The hatchery contribution to each year's escapement, stratified by river location and sex, was calculated by expanding the estimated number of CWT fish of each tag code group in proportion to the percentage of juvenile fish having a CWT at time of release:

$$EHC_{i,r,tc} = \frac{EST_{i,r,tc} \bullet (RM_{tc} + RUM_{tc})}{RM_{tc}} \quad (7)$$

where *EHC* is the estimated hatchery contribution, *RM* is the number of Chinook released with CWTs for each tag code group (*tc*), and *RUM* is the number of Chinook released without CWTs for each tag code group (*tc*).

These estimates of contribution by tag code were then summed to give the hatchery contribution of all tag codes to the entire escapement, stratified by river, sex, and brood year:

$$EHC_{i,r,t} = \sum_{t=1}^{j} \sum_{r=1}^{k} \sum_{i=1}^{m} \sum_{tc=1}^{n} EHC_{t,r,i,tc} \qquad (8)$$

where *n* is the number of tag codes for a given brood year *t*.

Percent hatchery contribution by sex and age were then calculated using the Petersen population estimates for adult males and females.

RESULTS

CARCASS TAGGING AND RECOVERY

Carcass tagging and recovery surveys were carried out between mid October and the end of November or early December. For the period 1999-2007, the average yearly effort was 128.3 +/- 16.8 person days (Figure 2; Appendices 2, 15-18). Tag recovery rates from 1999-2007 ranged from 42.2-65.0% on the Campbell River and 52.6-79.0% on the Quinsam River, and are summarized in Table 1 (Appendices 3, 15, and 16). The number of tags applied each year is relative to the escapement of spawners. Technicians surveyed each river system twice per week, but survey frequency of a given area varied from year to year dependant on river conditions.

Table 1. Tag recovery rates (%) by sex and system for the Campbell and Quinsam rivers. (Significant differences between groups by chi-square analyses (P<0.05) indicated in bold).

	Campbell R		Quinsam R		Combined System	
Year	Males	Females	Males	Females	CR	QR
1999	**36.0**	**55.3**	56.8	56.9	**47.9**	**56.9**
2000	54.4	64.4	76.1	81.3	**60.0**	**79.0**
2001	46.7	56.3	76.7	80.9	**51.6**	**78.7**
2002	66.4	62.7	71.4	77.0	**64.3**	**75.0**
2003	63.2	66.7	**58.0**	**77.6**	65.0	68.5
2004	34.5	49.4	**50.5**	**61.5**	**42.2**	**57.0**
2005	47.2	54.4	52.7	63.7	50.9	59.6
2006	59.7	55.7	47.1	55.2	57.4	52.6
2007	51.7	55.6	48.7	56.7	54.0	53.9

Carcass tag recovery rates between the Campbell River and Quinsam River were significantly different ($P<0.05$, χ^2; Zar 1984) in 1999-2002 and 2004 (Table 1). Tag recovery rates for females were significantly different than males in the Campbell River ($P<0.05$) in 1999, and the Quinsam River ($P<0.05$) in 2003 and 2004 (Table 1). These rates also include carcasses recovered with missing staple tags (opercular punches only). The incidence of yearly tag loss among recovered carcasses ranged between 0-3.6% on the Campbell River and between 0-5.6% on the Quinsam River over the nine year study period.

Sequential daily totals of carcasses examined, tagged, and recovered are stratified by river and sex, and presented in Appendices 17 and 18. Note that the actual number of total fish examined (includes tags recovered) is greater than the value used for C when calculating the Petersen estimate formula, as recoveries on or before the first day of tagging were not included.

POPULATION ESTIMATION

Petersen escapement estimates with 95% confidence limits are displayed in Appendix 4, stratified by river and sex. Also included are estimates for the combined system. Total escapement to the Campbell/Quinsam River for 1999-2007 (Table 2) was estimated to be between 6,694 (in 2007) and 14,607 (in 2001). The total system returns in 2001 and 2002 were the largest since 1988-1990 when escapements ranged between approximately 13,000 and 15,700 (Figure 1). These are adult counts and do not include jacks or age-1 fish. Quinsam River total escapement consisted of the Petersen estimate for the lower river below the counting fence, hatchery rack recoveries, upstream fence counts and transfers (above fence or channel). As shown in Table 2 during the period 1999-2007 Chinook adult escapements (as calculated by Petersen estimate) to the Quinsam River fell between 1,956 (in 1999) and 7,893 (in 2001) and the Campbell River ranged between 517 (in 2005) and 1,422 (in 2006).

Table 2. Adult escapement estimates to the Campbell and Quinsam rivers.

	Campbell River			Quinsam River				Combined System
Year	Lower 95% CL	Petersen Est.	Upper 95% CL	Lower 95% CL	Petersen Est.	Upper 95% CL	Total Esc.	Total Esc.
1999	1,036	1,205	1,373	1,763	1,956	2,149	7,051	8,256
2000	699	791	883	3,606	3,818	4,030	7,420	8,211
2001	769	931	1,092	7,521	7,893	8,264	13,676	14,607
2002	1,125	1,256	1,387	7,406	7,882	8,358	11,791	13,047
2003	477	568	658	3,650	3,932	4,214	6,721	7,289
2004	923	1,199	1,475	4,299	4,839	5,379	8,865	10,064
2005	401	517	633	2,907	3,295	3,683	7,153	7,670
2006	1,256	1,422	1,589	3,457	4,212	4,966	8,072	9,494
2007	533	650	767	1,762	2,025	2,288	6,044	6,694

In the 1999-2007 periods, relative percentages of fish returning ranged from 6.4-15.0% for the Campbell River, from 46.1-75.4% for the Quinsam River, and the Quinsam Hatchery varied from 15.0-39.4% (Table 3).

Table 3. Percentage of total adults returning to each recovery location.

Year	Campbell River	Quinsam River	Quinsam Hatchery
1999	14.6	46.1	39.4
2000	9.6	61.6	28.8
2001	6.4	74.4	19.2
2002	9.6	75.4	15.0
2003	7.8	64.2	28.1
2004	11.9	72.2	15.9
2005	6.7	68.4	24.8
2006	15.0	62.3	22.7
2007	9.7	61.1	29.2

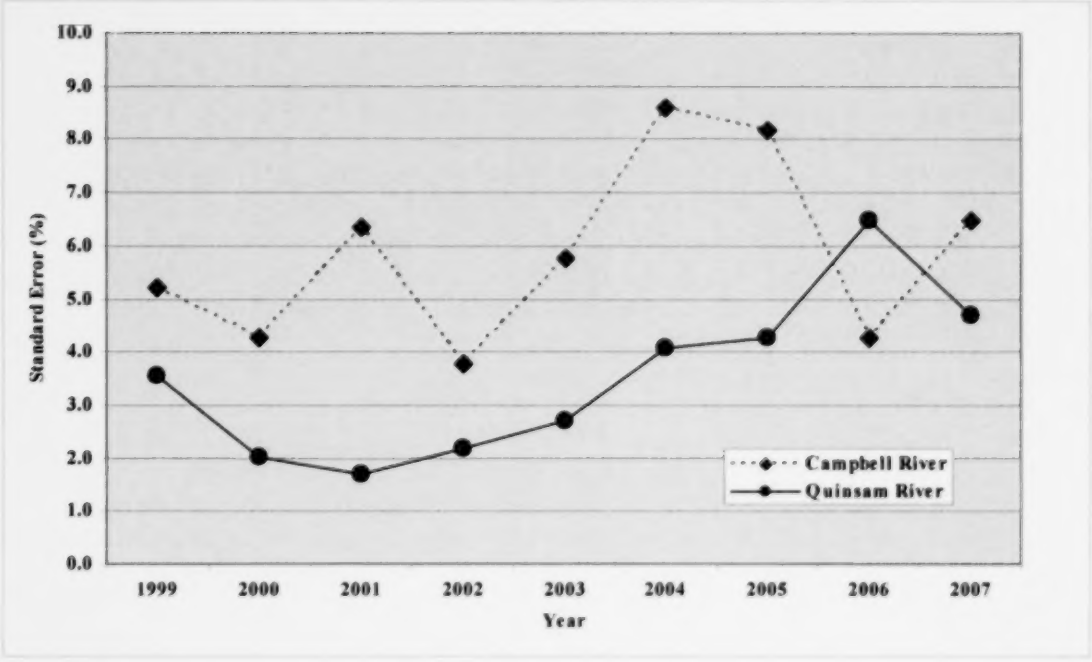

Figure 3. Spawning grounds estimate of error.

Percent standard error (Figure 3) in Petersen estimates for the Campbell River ranged from between 3.8% in 2002 and 8.6% in 2004, while the Quinsam River ranged between 1.7% in 2001 and 6.5% in 2006. Years with higher error may be attributed to a number of factors. For example, high flows, changes in river course, and low escapements may limit access to fish thereby affecting tag and recovery rates among years.

AGE, LENGTH, AND SEX COMPOSITION

During the period covered by this report, more than 99% of the fish aged by scale analysis left the Campbell/Quinsam system to rear in the ocean during their first year of life. Total ages of those sampled ranged from 1-6 years (Appendices 5-8). Males, predominantly age-4 in Campbell and Quinsam samples, contributed 44.7-67.8% and 47.7-83.6%, respectively. Age-3 male range was 5.4-23.8% and 6.9-42.2% of Campbell and Quinsam carcasses assessed, while age-5 males comprised 15.2-44.1% and 4.7-27.8% (Figures 4 and 6; Appendices 5 and 6). Age-4 and age-5 females in turn dominated or contributed similarly in both rivers' data. Age-4 female range was 32.7-65.0% and 40.1-86.9% respectively in Campbell and Quinsam samples, while age-5 female range was 33.8-67.0% and 12.4-59.4% (Figures 5 and 7; Appendices 5 and 6). Fish handled at the Quinsam Hatchery rack were also primarily age-4 males from 39.9-73.1%, and age-4 and -5 females from 41.0-83.4% and 16.2-58.2% (Appendix 7).

Between 1999 and 2007, POH lengths were recorded for 36-70% of the carcasses (marked and unmarked fish) recovered in the Campbell River, 11-35% of the carcasses recovered in the Quinsam River, and 18-35% of the Chinook handled at the hatchery rack. Yearly weighted mean length range for Campbell adult males was 748-814 mm, Campbell females were 764-818 mm. In contrast, Quinsam males ranged between 702 and 745 mm and Quinsam females between 760 and 796 mm (Table 4; Appendices 5-8). Jacks were excluded.

Evaluation of significant differences in mean adult length between groups is complicated by variation in age class contribution (Table 4; Appendices 5-7). Age-4 fish however, are well represented across all strata and age-5 females are also in sufficient numbers to be used comparatively. T-tests indicated that Campbell age-4 adults were significantly different in only two of nine years, males being larger in 2002, while females were larger in 2005 ($P<0.05$). Age-4 Campbell males were significantly different than same age Quinsam males in two of nine years, being a larger size in 1999 and 2002 ($P<0.05$). Campbell age-4 females were significantly larger than Quinsam age-4 females in 1999, 2000, 2005, and 2006 ($P<0.05$). Quinsam age-4 males were significantly smaller than same age Quinsam females in 2002 ($P<0.05$). Age-5 Campbell females were significantly larger than Quinsam females in 5 of nine years (2001, 2002, 2004, 2005, and 2006) ($P<0.05$).

Based on Petersen population estimates in 1999-2007, the male/female sex ratio was between 0.66-1.23 for the Campbell River, between 0.64-1.09 for the Quinsam River, and Quinsam Hatchery ranged from 1.16-2.57. A significantly greater number of females than males were examined in deadpitch surveys of the Campbell River, in 1999, 2002, 2006, and 2007, and on the Quinsam River in all years except 1999 and 2001 ($P<0.05$, χ^2; Zar 1984). Males were in significant abundance at the hatchery in all years of this study ($P < 0.05$).

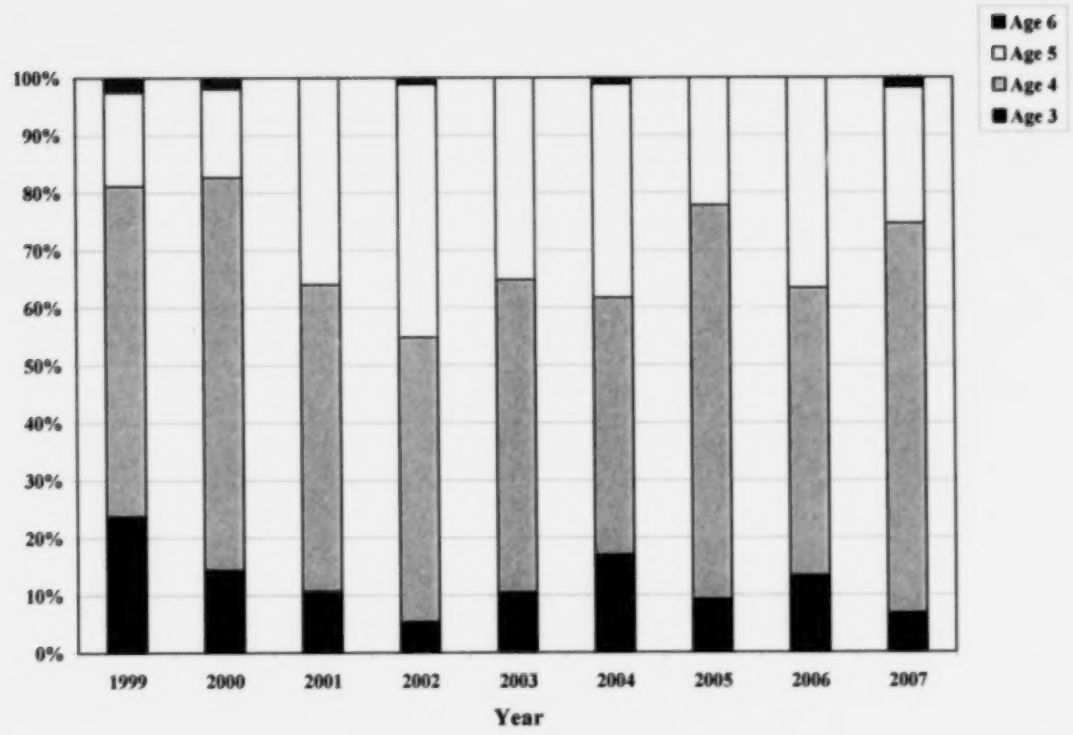

Figure 4. Contribution by age class of Campbell River Chinook males.

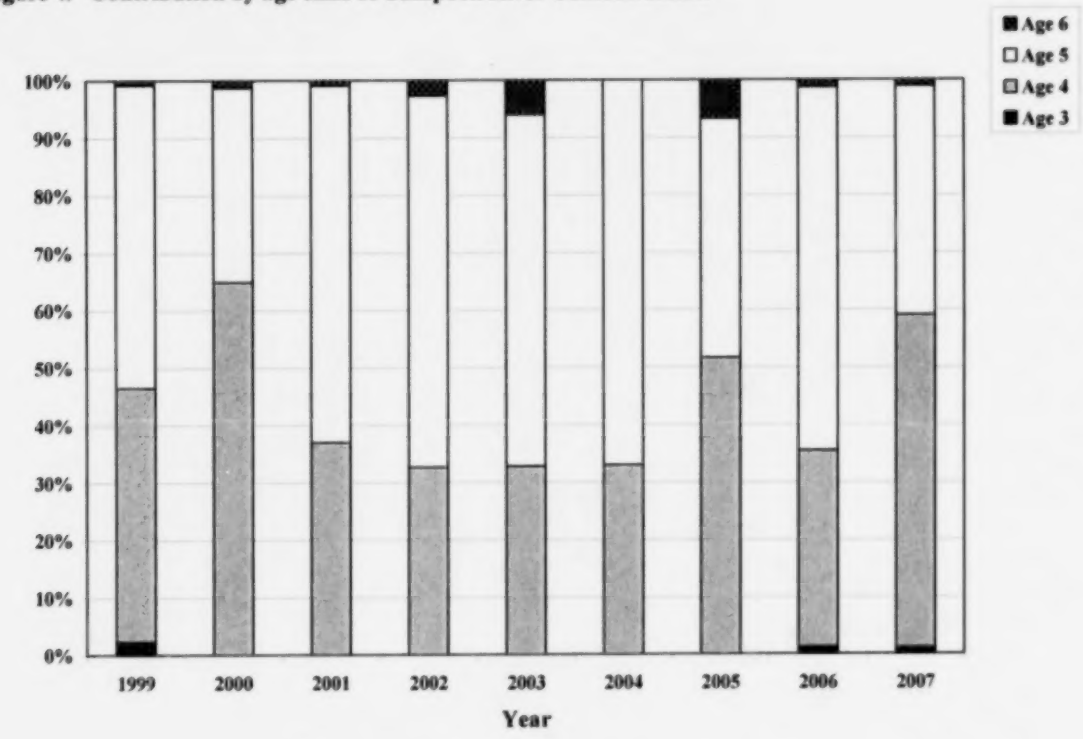

Figure 5. Contribution by age class of Campbell River Chinook females.

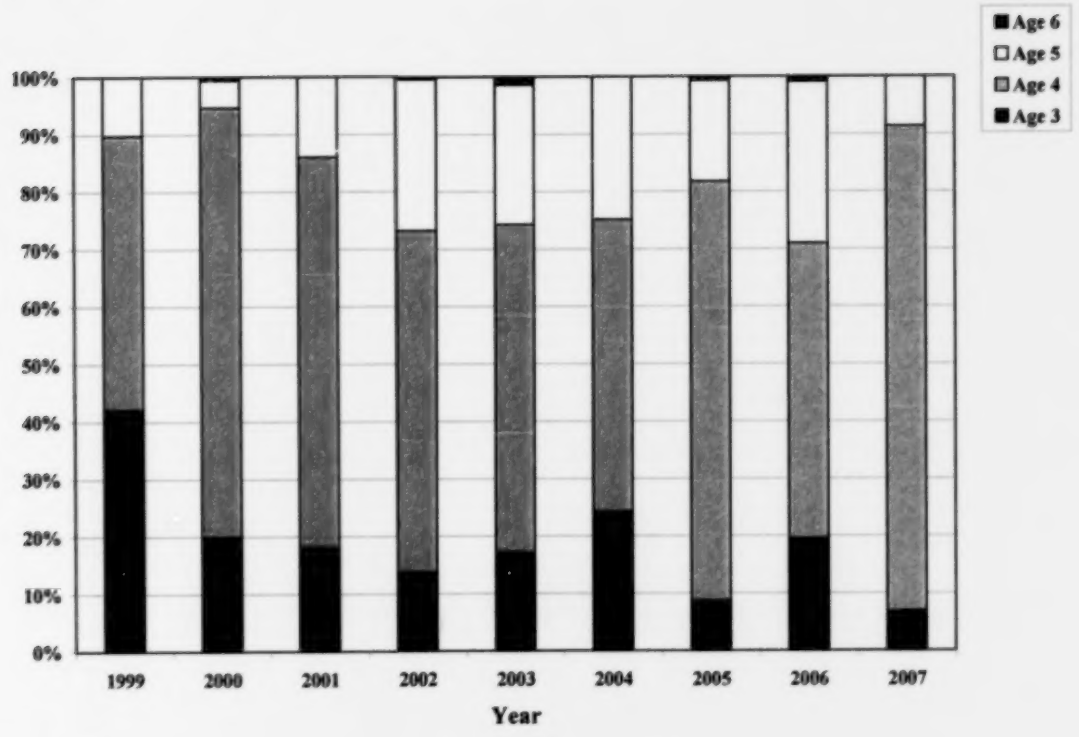

Figure 6. Contribution by age class of Quinsam River Chinook males.

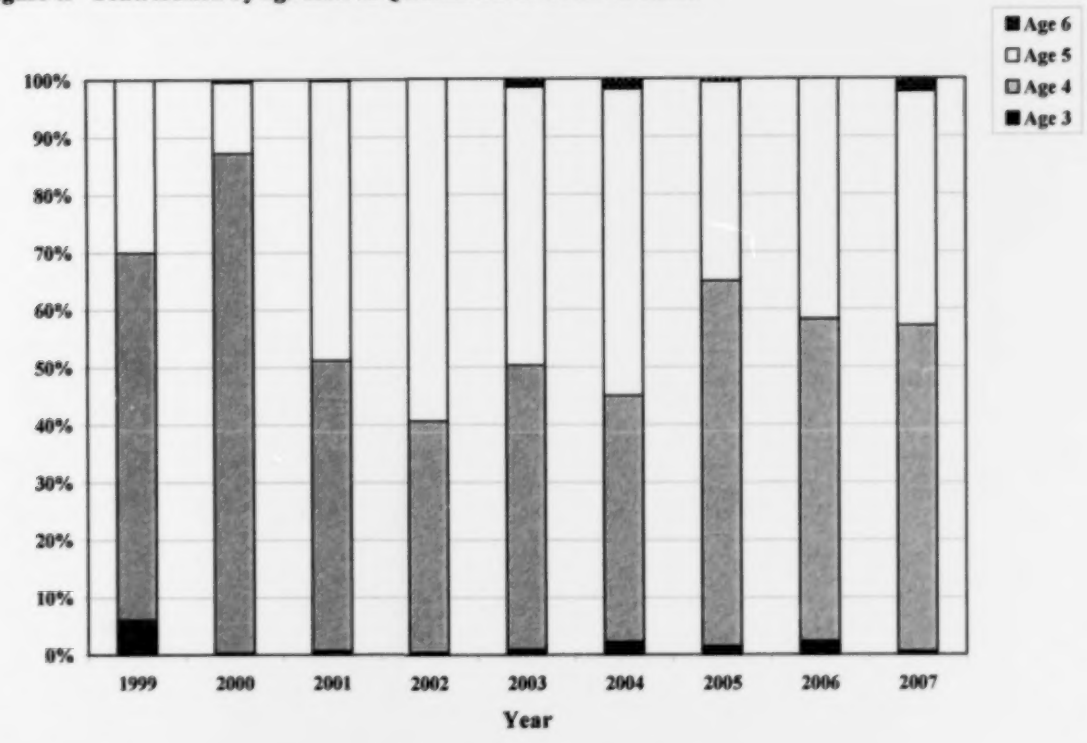

Figure 7. Contribution by age class of Quinsam River Chinook females.

Table 4. Mean carcass length (in mm) by system, sex, and age.

System	Sex	Age	1999	2000	2001	2002	2003	2004	2005	2006	2007
Campbell	Males	3	751	594	593	644	570	591	620	631	598
		4	782	780	749	794	735	752	748	747	757
		5	785	844	863	857	843	813	807	842	869
		Wt. Mean	773	767	773	814	756	749	748	767	775
Campbell	Females	4	784	783	762	766	746	750	788	757	738
		5	805	830	842	841	836	823	834	810	806
		Wt. Mean	796	799	812	818	805	799	812	790	764
Quinsam	Males	3	624	579	608	592	587	622	575	616	574
		4	743	767	738	740	741	745	748	737	746
		5	842	858	813	834	831	787	808	794	859
		Wt. Mean	702	734	725	744	739	725	743	729	745
Quinsam	Females	4	752	759	746	759	751	747	743	741	744
		5	803	819	815	822	815	791	795	791	787
		Wt. Mean	762	767	779	796	783	769	760	761	762

* Age-3 and age-6 lengths have been included in weighted means but are not displayed due to low sample sizes.

CODED-WIRE TAGGING AND RECOVERY

Adipose clipped and CWT juvenile Chinook releases (1993-2004 brood years) from Quinsam Hatchery were captured as adults in the dead recovery program on the Campbell and Quinsam rivers and from the hatchery rack in 1999-2007 (Table 5; Appendices 11 and 19-21).

Table 5. Adult CWT recoveries from Quinsam Hatchery releases and strays.

	Campbell River		Quinsam River		Quinsam Hatchery		Combined System	
Year	CWT	Stray CWT	CWT	Stray CWT	CWT	Stray CWT	CWT	Stray CWT
1999	18	1	57	0	493	0	568	1
2000	17	0	186	1	360	1	563	2
2001	22	0	469	2	498	0	989	2
2002	29	1	384	2	267	1	680	4
2003	10	0	110	0	190	0	310	0
2004	22	0	135	4	297	3	454	7
2005	5	0	104	0	327	2	436	2
2006	21	0	144	0	322	1	487	1
2007	7	3	43	1	311	0	361	4

The 23 identified strays (Table 6) came from DFO facilities or other projects. Eighty-five CWT jacks (including 5 strays) were also identified from recoveries at the hatchery rack, and 1 marked jack from the Quinsam River deadpitch (not included in tables). Verification of strays was attempted through tag re-reads by J.O. Thomas; however the majority of tags retrieved in this study had been archived and were not easily accessible. The 5 tags from 2006 and 2007 were confirmed as strays.

Table 6. Hatchery release locations of stray CWT recoveries in the Campbell and Quinsam rivers.

Hatcheries/Projects	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
Puntledge	1	1	1	2			1		4	10
Big Qualicum				2						2
Little Qualicum							1	1		2
Nitinat						1				1
Tenderfoot			1							1
Cowichan						1				1
Nanaimo						1				1
Soos Cr/WDFW*		1				1				2
Gorst Cr/SUQ*						1				1
Geo Adams/WDFW*						1				1
Umatilla/ODFW*						1				1
Total:	1	2	2	4	0	7	2	1	4	23

* U.S Facilities: WDFW - Washington Dept. of Fish & Wildlife
ODFW - Oregon Dept. of Fish & Wildlife
SUQ - Suquamish Tribe (Washington)

Total numbers of adipose clipped recoveries are slightly higher than total CWT recoveries due to tags or "pins" either lost or unreadable during the tag-reading process, or missing pins (the retrieved head did not contain a pin) (Appendix 11). The incidence of adipose clipped adults in hatchery returns (including fish checked for adipose fin clips and transported above the counting fence) ranged between 8.2% and 10.4%, similar to the Quinsam River recoveries of 5.3-9.3%, while the Campbell River returns were the lowest at 2.7-5.6% (Table 7).

Table 7. Percentage of total adipose clipped adults returning to each recovery location.

Year	Campbell River	Quinsam River	Quinsam Hatchery
1999	5.5	7.0	9.9
2000	4.8	8.0	10.4
2001	5.6	9.3	10.4
2002	4.6	7.6	8.2
2003	3.3	5.3	8.2
2004	5.5	5.7	9.2
2005	2.7	5.9	9.4
2006	3.9	7.3	8.7
2007	3.5	5.9	9.1

Hatchery release information was determined for all recovered tag codes (Appendix 10). Juvenile Chinook releases from Quinsam Hatchery contributing to these returns, ranged between 2.1 million (1993 brood) and 3.6 million (1999 brood) as indicated in Figure 8. The average CWT mark rate of the 1993-2004 brood releases was 11.1%.

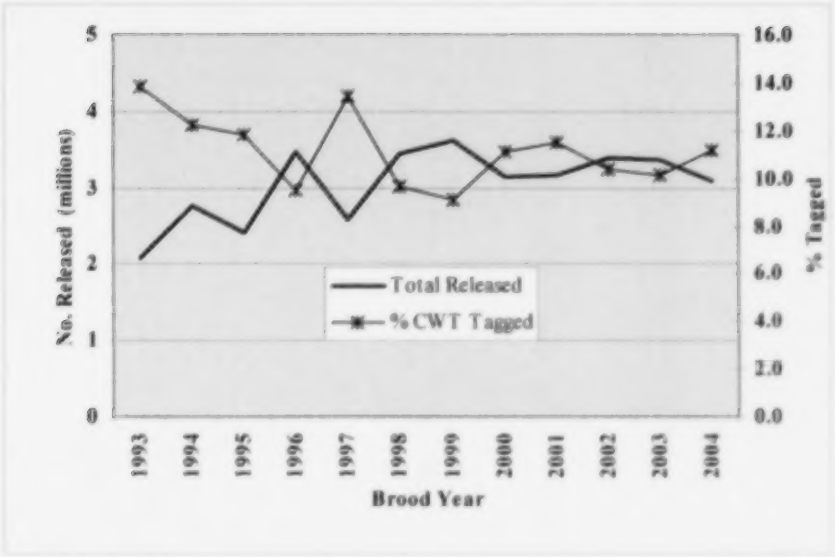

Figure 8. Quinsam Hatchery juvenile Chinook releases for adult age classes returning in 1999-2007 escapements.

Hatchery Contribution

Through expansion, the actual number of CWTs present in the escapement was used to estimate the total hatchery contribution. Although CWT strays from other facilities were included, their expansion may be an overestimate of actual contribution (U.S. tag codes were not expanded). Allocations of the total escapement by tag code, sex, and river are shown in Appendices 11-13. The estimated contribution by age class to the escapement can be found in Appendix 14.

Estimated hatchery contribution to the Campbell River population of Chinook males ranged from 10.6-43.3% and 17.9-51.8% for females. Contributions to the in-river Quinsam River Chinook escapement were from 40.5-64.0% for males and 39.9-75.5% for females. Fish of hatchery origin composed 79.2-88.6% of males and 72.4-88.4% of females returning to Quinsam Hatchery (Table 8; Figure 9; Appendix 14).

Table 8. Estimated hatchery and stray contribution (%) to the Campbell/Quinsam system.

	Campbell River				Quinsam River				Quinsam Hatchery				Combined System	
	Hatchery		Stray		Hatchery		Stray		Hatchery		Stray		Hatchery	Stray
Yr	M	F	M	F	M	F	M	F	M	F	M	F	Total	Total
1999	22.4	27.6	0	6.3	47.2	42.0	0	0	87.3	76.8	0	0	66.0	0.5
2000	24.0	34.2	0	0	46.4	66.9	0.6	0	87.5	79.5	0.04	0	66.6	0.1
2001	35.6	51.8	0	0	51.5	75.5	0.4	0	85.2	73.6	0	0	68.3	0.1
2002	27.4	32.3	0	0.8	63.2	56.4	0.8	0	78.7	72.4	1.4	0	61.2	0.5
2003	34.5	17.9	0	0	45.6	46.6	0	0	87.6	87.2	0	0	58.9	0.0
2004	43.3	42.0	0	0	49.1	47.1	0.2	2.7	85.8	88.4	0.1	0	61.4	0.8
2005	10.6	25.1	0	0	63.9	39.9	0	0	79.0	75.7	0.2	4.8	61.6	0.9
2006	40.3	18.1	0	0	50.5	69.3	0	0	78.6	82.4	1.1	0	63.9	0.3
2007	32.4	8.2	4.4	36.4	40.5	36.0	0	4.5	88.6	82.5	0	0	63.7	3.2

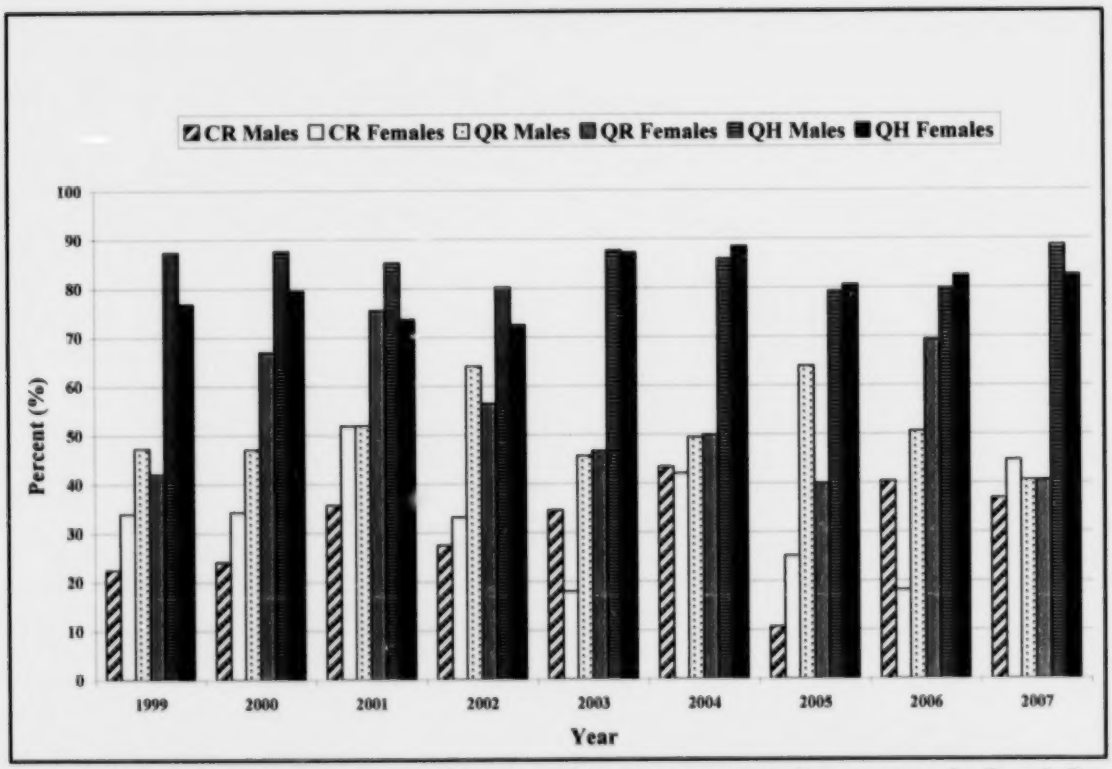

Figure 9. Estimated contribution by sex, of hatchery Chinook returns (including strays) to the Campbell River and Quinsam River (below fence) escapements and to the Quinsam Hatchery (brood stock, above fence, and channel transfers) in 1999-2007.

THERMAL MARKING AND OTOLITH RECOVERY

All Chinook releases since 1997 (96 brood) from Quinsam Hatchery have been thermally otolith marked (Table 9). Since 2000, a target of 100 pairs of otoliths from carcasses on each river and at the hatchery rack has been part of the sampling protocol. During this study the requirement has been easily met on the Quinsam River and at the hatchery; however on the Campbell River in 2003-2005 only 45-52 sets were collected. Results and contribution analysis will be presented in a future publication.

Table 9. Summary of thermally marked Chinook releases by Quinsam Hatchery.

Brood Year	Release Year	Number Released
1996	1997	3,628,008
1997	1998	2,712,900
1998	1999	3,470,239
1999	2000	3,623,777
2000	2001	3,905,080
2001	2002	4,041,968
2002	2003	4,157,461
2003	2004	4,207,510
2004	2005	3,606,709
2005	2006	4,279,713
2006	2007	4,301,452

DISCUSSION AND CONCLUSIONS

POPULATION ESTIMATION

Errors may arise as a result of differences in the abundance of Chinook between sexes and/or river locations, thus escapement estimates must be stratified in order to reduce these errors. Over the years of this study, sex ratio differences were observed in hatchery broodstock, dead recovery, and Petersen estimates. A significantly greater number of females than males were encountered in deadpitch surveys of the Quinsam River in 2000, 2002-2007, and the Campbell River in 1999, 2002, 2006, and 2007, a trend that has been noted in past reports. Shardlow et al., (1986) found larger numbers of females than males in both live and deadpitch recoveries in the Quinsam/Campbell system in 1984-86, while Andrew et al., (1988), Bocking, (1991), Frith, (1993), Frith et al., (1993), Frith and Nelson (1994, 1995), and Sturhahn, et al., (1999), found that females continued to dominate in the Quinsam River until 1995 and again in 1997. Females were also found in greater abundance in Campbell River deadpitches throughout this period, with the exception of 1994 where they were outnumbered by males. The number of males was consistently greater at the Quinsam Hatchery rack. One possible explanation for the prevalence of males returning to the hatchery is that the males tend to home in on the hatchery water supply. In addition, the hatchery fishway tends to "grade" fish as larger fish tend to avoid the fishway. As a result, the number of smaller males and jacks

recovered in the hatchery is higher. This avoidance factor biases the return composition for both the Quinsam River and hatchery rack. Jack size may also account for the low numbers encountered in deadpitch surveys; smaller carcasses may be more likely to washout of rivers rather than collect in the shallows or on the banks. Discrepancy between recovery rates of male/female Chinook spawners also occurs in other species. In other deadpitch programs, females tend to be encountered more than males; for Sockeye salmon (Petersen 1954), Pink salmon (Ward 1959), and Coho salmon (Eames and Hino 1981; Eames et al. 1981). This may be due to behavioural differences between the sexes, eg. females stay near the redds after spawning and are more prone to be left on the banks (Ward 1959). Stratification of escapement estimates by sex and river location avoids a known source of error in the Quinsam/Campbell system and this practice should be continued for future population estimates.

It is unknown as to how completely tagged carcasses mix with the rest of the carcass population. Incomplete mixing may have occurred in situations where tagged carcasses settled in deep pools preventing further movement. This potential bias arising from incomplete mixing is usually addressed by conducting tagging and recovery efforts in proportion to the distribution of fish, by frequently moving to different tagging and recovery sites throughout both operations. Methods used in the past, of snorkel and SCUBA diving for carcasses in deeper areas of the Campbell River, were discontinued in 2000 due to inconsistencies in carcass retrieval rates from year to year when visibility was poor. A more reliable method has been implemented and followed in subsequent years; technicians now gaff and recover carcasses from these lower river areas by jet boat. In 2008 and 2009 a study was carried out to assess the mixing of tagged and untagged carcasses and evaluate bias (report in progress).

AGE, LENGTH, AND SEX COMPOSITION

In 1999-2007, Chinook escapements to the Campbell and Quinsam rivers were composed mainly of age-4 males and age-4 and -5 females. No consistent pattern of sex ratios between river locations has been reported in previous years (Frith et al. 1993; Frith and Nelson 1994; 1995) or during this study. Past reports have noted the trend of male and female Chinook from the Campbell River having larger mean lengths than male and female Chinook from the Quinsam River (Bocking 1991; Sturhahn et al. 1999; 2000). Differing age composition from year to year between sexes and systems may affect overall adult size comparison. Predominant age-4 fish indicated that Campbell males were significantly larger in mean length than Quinsam males in only two of the nine years while Campbell females were significantly larger than Quinsam females approximately half of the time, being significantly larger in four years as age-4, and in five years as age-5. There was little significant difference in length between age-4 males and females within each river system, being detected in only two of the years on the Campbell and in one year on the Quinsam River.

POTENTIAL BIASES IN CODED-WIRE TAG RECOVERY

In this study the actual number of CWTs recovered in the escapement was used to estimate hatchery contribution. Potential sources of bias have been addressed in the estimation of total CWTs returning to the system however the following factors have not been explicitly included:

1. Low numbers of recovered and decoded CWTs reduces the precision of the estimates;
2. The sample of heads obtained for decoding of CWTs may not be a representative random sample from the population, and may be biased through size selectivity; and
3. The expansion of stray tag codes may result in an over-estimate of contribution.

SUMMARY

1. Total escapement estimates for Chinook salmon in the Campbell/Quinsam River system using carcass tagging and hatchery returns were estimated for the following years as:

Year	Combined System Escapement Estimate
1999	8,256
2000	8,211
2001	14,607
2002	13,047
2003	7,289
2004	10,064
2005	7,670
2006	9,494
2007	6,694

2. Chinook returning to the Campbell River, Quinsam River, and Quinsam Hatchery ranged in total age from one to six years. Virtually all (>99%) of fish sampled entered the marine environment in their first year of life. The dominant age group for males in the Campbell and Quinsam rivers and Quinsam Hatchery was age-4, while females returned to both systems and the hatchery primarily as age-4 and -5.
3. There was no clear trend in sex ratio based on Petersen estimations, however females were in significant abundance in four of nine years in deadpitch surveys of the Campbell River, and in most years with the exception of 1999 and 2001 in Quinsam River surveys. Males outnumbered females in all years at the Quinsam Hatchery rack. Staple tag recovery rates for females were significantly greater on the Campbell River in 1999, and in 2003 and 2004 on the Quinsam River.

4. Assessment of weighted mean length over the nine year period indicated that Campbell River males ranged from 748-814 mm, and females from 764-818 mm, while Quinsam River males were 702-745 mm and females 760-796 mm in size. A comparison of age-4 groups indicated there was little significant difference in length within years between each sex on the Campbell and Quinsam, and between males of each river. Female length showed more variation, significant differences were detected between Campbell and Quinsam fish in four survey years as age-4 and in five survey years as age-5.

5. The actual number of coded-wire tagged adults recovered in the Campbell/Quinsam system including strays, ranged between 310 (in 2003) and 991 (in 2001). Total estimated returns of CWT Chinook in those escapement years were calculated to be 369 and 1143.

6. Total hatchery and stray contribution to the escapement based on CWT returns was estimated to range from 17.4-43.1% for the Campbell River, 40.5-63.2% for the Quinsam River, and 77.0-87.5% of adults handled at the Quinsam Hatchery rack

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LITERATURE CITED

Anderson, S. 2007. Campbell River mainstem spawning gravel 2006 First Island. Prepared for the Tyee Club of British Columbia with financial support from BC Hydro Bridge Coastal Fish and Wildlife Restoration Program. Available on the internet at: www.bchydro.com/bcrp/projects/docs/vancouver_island/06.CBR.08.pdf.

Andrew, J.H., Lightly, M., and Webb, T.M. 1988. Abundance, age, size, sex and coded wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1985. Can. Manuscr. Rep. Fish. Aquat. Sci. 2007: 46 p.

Armstrong, R.W., and Argue, A.W. 1977. Trapping and coded wire tagging of wild Coho and Chinook juveniles from the Cowichan River system, 1975. Fish. Mar. Serv., Tech. Rep. Ser. PAC/T-77-14: 58 p.

Blankenship, H.L. 1990. Effects of time and fish size on coded wire tag loss from Chinook and Coho salmon. Proceedings of the First International Symposium on Fish Marking Techniques. Seattle, Washington. June 1988.

Bocking, R.C., English, K.K., and Webb, T.M. 1990. Abundance, age, size, sex and coded wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1986-1988. Can. Manuscr. Rep. Fish. Aquat. Sci. 2065: 126 p.

Bocking, R.C. 1991. Abundance, age, size, sex and coded wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1989-90. Can. Manuscr. Rep. Fish. Aquat. Sci. 2124: 109 p.

Burt, D.W. 2004. Restoration of the lower Campbell River, a review of projects to 2003 and a plan for future works. Prepared for the Department of Fisheries and Oceans, the Ministry of Water, Land and Air Protection and the Campbell River Gravel Committee. 96 p.

Burt, D.W., and Burns, T. 1995. Assessment of salmonid habitat in the lower Campbell River. Prepared for BC Hydro, Burnaby B.C. 68 p. + 56 p. appendices.

Campbell River Hydro/Fisheries Advisory Committee. 1997. Campbell River interim flow management strategy. Available from BC Hydro, 10 John Hart Road, Campbell River, B.C. 51 p.

Eames, M., and Hino, M. 1981. A mark-recapture study of an enumerated Coho spawning population. Wash. Dep. Fish. Progr. Rep. 148: 22 p.

Eames, M., Quinn, I., Reidinger, K., and Harling, D. 1981. Northern Puget Sound 1976 adult Coho and Chum tagging studies. Wash. Dep. Fish. Tech. Rep. 64: 217 p.

Frith, H.R. 1993. Abundance, age, size, sex and coded wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1992. Can. Manuscr. Rep. Fish. Aquat. Sci. 2207: 56 p.

Frith, H.R., Nass, B.L., and Nelson, T.C. 1993. Abundance, age, size, sex and coded wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1991. Can. Manuscr. Rep. Fish. Aquat. Sci. 2199: 57 p.

Frith, H.R., and Nelson, T.C. 1994. Abundance, age, size, sex and coded wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1993. Can. Manuscr. Rep. Fish. Aquat. Sci. 2251: 59 p.

Frith, H.R., and Nelson, T.C. 1995. Abundance, age, size, sex and coded wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1994. Can. Manuscr. Rep. Fish. Aquat. Sci. 2325: 61 p.

Gilbert, C.H., and Rich, W.H. 1927. Investigations concerning the red salmon run to the Karluk River, Alaska. Bull. U.S. Bus. Fish. 43(2): 1-69 (Doc. No. 991).

Jefferts, K.B., Bergman, P.K., and Fiscus, H.F. 1963. A coded wire tag identification system for macro-organisms. Nature (London). 198: 460-462.

Kuhn, B.R. 1988. The MRP-Reporter Program: A data extraction and reporting tool for the Mark Recovery Program Database. Can. Tech. Rep. Fish. Aquat. Sci. 1625: 145 p.

Levings, C.D., McAllister, C.D., and Chang, B.D. 1986. Differential use of the Campbell River Estuary, British Columbia, by wild and hatchery-reared juvenile Chinook salmon (*Oncorhynchus tshawytscha*). Can. J. Fish. Aquat. Sci. 43: 1386-1397.

Marshall, D.E., Brown, R.F., Chahley, V.D., and Demontier, D.G. 1977. Preliminary catalogue of salmon streams and spawning escapements of Statistical Area 13 (Campbell River). Environment Canada. Fish. Mar. Serv. PAC/D-77-1: 176 p.

Petersen, A.E. 1954. The selective action of gillnets on Fraser River Sockeye salmon. Int. Pac. Salmon Fish. Comm. Bull. 5: 101 p.

Ricker, W.E. 1975. Computation and interpretation of biological statistics of fish populations. Bull. Fish. Res. Board Can. 191: 382 p.

Robson, D.S., and Regier, H.A. 1964. Sample size in Petersen mark-recapture experiments. Trans. Am. Fish. Soc. 93: 215-226.

Seber, G.A.F. 1982. The Estimation of Animal Abundance, 2nd Ed. The Blackburn Press, Caldwell, N.J., USA. 654 p.

Shardlow, T.F., Webb, T., and Lightly, D.T 1986. Chinook salmon escapement estimation of the Campbell and Quinsam rivers in 1984: accuracy and precision of mark/recapture techniques using tagged salmon carcasses. Can. Tech. Rep. Fish. Aquat. Sci. 1507: 52 p.

Sturhahn, J.C., Nagtegaal, D.A., and Trenholm, M. 1999. Abundance, age, size, sex and coded-wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1997. Can. Manuscr. Rep. Fish. Aquat. Sci. 2477: 49 p.

Sturhahn, J.C., Nagtegaal, D.A., and Trenholm, M. 2000. Abundance, age, size, sex and coded-wire tag recoveries for Chinook salmon escapements of Campbell and Quinsam rivers, 1998. Can. Manuscr. Rep. Fish. Aquat. Sci. 2519: 49 p.

Ward, F.J. 1959. Character of the migration of Pink salmon to Fraser River spawning grounds in 1957. Int. Pac. Salmon Fish. Comm. Bull. 10: 70 p.

Water Survey of Canada. 24 May 2006. Environment Canada. 16 Feb. 2009. http://www.ec.gc.ca/rhc-wsc/ Hydrometric Program: Data Products and Services; Archived Hydrometric Data; Quinsam River near Campbell/08HD005.

Zar, J.H. 1984. Biostatistical Analysis. 2nd Ed. Prentice-Hall, N.J., USA. 718 p.

APPENDICES

Appendix 1. Summary of methods for the Campbell and Quinsam River Chinook enumeration programs, 1999-2007.

Item	Method and Materials
Dead recovery population estimate	Petersen estimate, sum of separate estimates for sexes and rivers.
Carcass tagging	Cattle ear tags (a) applied in situ to carcasses recovered in river.
Secondary marking (dead)	Single hole punch in left operculum for Campbell River carcasses and single hole punch in right operculum for Quinsam River carcasses.
Recovery of fish	Foot, SCUBA and snorkel surveys, hatchery rack, and jet boat.
Coded-wire tagging (CWT)	Collection of heads from adipose clipped fish in dead recovery and at hatchery rack.
Biological and physical sampling	Scales, CWTs, postorbital-hypural lengths, and otoliths from dead recovery and hatchery rack. Sex ratios from sex-specific population estimates for each river and hatchery rack.

(a) Tags were supplied by:
KetChum Manufacturing Sales Ltd., 396 Berkely Ave., Ottawa, Ontario, K2A 2G6
(Size No. 3, 1 1/8 " x 1/4 ")

Appendix 2. Summary of tagging and recovery effort for Chinook salmon carcasses in the Campbell and Quinsam rivers, 1999-2007.

		Person Days			
Year	River	Bank Walk/ Jet Boat	Diver	River Total	System Total
	Campbell	49.5	9.0	58.5	
1999	Quinsam	58.0	-	58.0	116.5
	Campbell	60.0	3.5	63.5	
2000	Quinsam	70.5	-	70.5	134.0
	Campbell	50.5	-	50.5	
2001	Quinsam	78.8	-	78.8	129.3
	Campbell	72.5	-	72.5	
2002	Quinsam	90.0	-	90.0	162.5
	Campbell	59.5	-	59.5	
2003	Quinsam	66.0	-	66.0	125.5
	Campbell	38.5	-	38.5	
2004	Quinsam	84.5	-	84.5	123.0
	Campbell	No Data	-	No Data	
2005	Quinsam	No Data	-	No Data	129.0 * Estimate
	Campbell	73.7	-	73.7	
2006	Quinsam	61.7	-	61.7	135.4
	Campbell	47.0	-	47.0	
2007	Quinsam	52.3	-	52.3	99.3

Appendix 3. Summary of in situ carcass tagging and dead recovery of Chinook salmon carcasses in the Campbell and Quinsam rivers, 1999-2007.

Category	Sex	1999			2000			2001			2002			2003		
		CR	QR	Total	CR	QR	Total	CR	QR	Total	CR	QR	Total	CR	QR	Total
CARCASS TAGS	Male	136	227	363	114	247	361	92	424	516	122	241	363	57	286	343
APPLIED (a,b)	Female	215	225	440	146	321	467	96	408	504	169	427	596	63	330	393
	Jack	0	3	3	0	3	3	1	0	1	0	4	4	0	2	2
	Total	351	455	806	260	571	831	189	832	1,021	291	672	963	120	618	738
TOTAL CARCASSES	Male	201	566	767	212	1,346	1,558	235	3,159	3,394	360	2,329	2,689	163	1,161	1,324
EXAMINED (a,b,d)	Female	362	549	911	260	1,669	1,929	245	3,054	3,299	450	3,565	4,015	209	1,503	1,712
	Jack	2	9	11	0	12	12	1	13	14	0	11	11	0	2	2
	Total	565	1,124	1,689	472	3,027	3,499	481	6,226	6,707	810	5,905	6,715	372	2,666	3,038
CARCASS TAGS	Male	49	129	178	62	188	250	43	325	368	81	172	253	36	166	202
RECOVERED (a,b,c)	Female	119	128	247	94	261	355	54	330	384	106	329	435	42	256	298
	Jack	0	1	1	0	0	0	0	0	0	0	2	2	0	0	0
	Total	168	258	426	156	449	605	97	655	752	187	503	690	78	422	500
TAGS LOST	Male	0	1	1	1	1	2	0	5	5	1	3	4	1	4	5
	Female	3	0	3	1	4	5	0	3	3	0	3	3	0	8	8
	Jack	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	3	1	4	2	5	7	0	8	8	1	6	7	1	12	13
TAG SUMMARY:																
Observed Tag Rate (%)		29.7	23.0	25.2	33.1	14.8	17.3	20.2	10.5	11.2	23.1	8.5	10.3	21.0	15.8	16.5
Tag Recovery Rate (%)		47.9	56.7	52.9	60.0	78.6	72.8	51.3	78.7	73.7	64.3	74.9	71.7	65.0	68.3	67.8
Tag Loss Rate (%)		0.9	0.2	0.5	0.8	0.9	0.8	-	1.0	0.8	0.3	0.9	0.7	0.8	1.9	1.8

(a) See Appendix 17 for number of carcasses examined, tagged, and recovered by date in the Campbell River.
(b) See Appendix 18 for number of carcasses examined, tagged, and recovered by date in the Quinsam River.
(c) Includes carcasses recovered with opercular hole punches only (ie. secondary marks).
(d) Includes tag recoveries.

Appendix 3. Summary of in situ carcass tagging and dead recovery of Chinook salmon carcasses in the Campbell and Quinsam rivers, 1999-2007. (Cont'd)

Category	Sex	2004			2005			2006			2007		
		CR	QR	Total	CR	QR	Total	CR	QR	Total	CR	QR	Total
CARCASS TAGS	Male	84	182	266	53	129	182	129	70	199	60	115	175
APPLIED (a,b)	Female	89	265	354	57	215	272	183	143	326	90	217	307
	Jack	0	0	0	0	1	1	0	0	0	0	3	3
	Total	173	447	620	110	345	455	312	213	525	150	335	485
TOTAL CARCASSES	Male	233	1,169	1,402	132	704	836	338	823	1,161	149	386	535
EXAMINED (a,b,d)	Female	268	1,564	1,832	133	1,257	1,390	480	1,384	1,864	204	704	908
	Jack	0	3	3	0	2	2	0	9	9	0	4	4
	Total	501	2,736	3,237	265	1,963	2,228	818	2,216	3,034	353	1,094	1,447
CARCASS TAGS	Male	29	92	121	25	68	93	77	33	110	31	56	87
RECOVERED (a,b,c)	Female	44	163	207	31	137	168	102	79	181	50	123	173
	Jack	0	0	0	0	0	0	0	0	0	0	1	1
	Total	73	255	328	56	205	261	179	112	291	81	180	261
TAGS LOST	Male	0	1	1	2	0	2	1	0	1	2	4	6
	Female	0	0	0	0	0	0	0	0	0	0	6	6
	Jack	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	1	1	2	0	2	1	0	1	2	10	12
TAG SUMMARY:													
Observed Tag Rate (%)		14.6	9.3	10.1	21.1	10.4	11.7	21.9	5.1	9.6	22.9	16.5	18.0
Tag Recovery Rate (%)		42.2	57.0	52.9	50.9	59.4	57.4	57.4	52.6	55.4	54.0	53.7	53.8
Tag Loss Rate (%)		-	0.2	0.2	1.8	-	0.4	0.3	-	0.2	1.3	3.0	2.5

(a) See Appendix 17 for number of carcasses examined, tagged, and recovered by date in the Campbell River.
(b) See Appendix 18 for number of carcasses examined, tagged, and recovered by date in the Quinsam River.
(c) Includes carcasses recovered with opercular hole punches only (ie. secondary marks).
(d) Includes tag recoveries.

Appendix 4 - 99. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 1999. Confidence limits were determined assuming R is normally distributed.

Area	Male	Female	Jack (g)	Total	
Campbell River: (a)					
Tags applied (c)	136	215	0	351	
Total carcasses examined (d)	201	362	2	565	
Tagged recoveries (e)	49	119	0	168	
Petersen estimate	552	652	NA	1,205	(h)
Lower 95% CL	447	589	NA	1,036	(h)
Upper 95% CL	657	716	NA	1,373	(h)
Quinsam River:					
Live transfer above Counting Fence (f)	857	577	19	1,453	
Below Counting Fence (b)					
Tags applied (c)	227	225	3	455	
Total carcasses examined (d)	566	549	9	1,124	
Tagged recoveries (e)	129	128	1	258	
Petersen estimate	993	963	NA	1,956	(h)
Lower 95% CL	895	868	NA	1,763	(h)
Upper 95% CL	1,091	1,058	NA	2,149	(h)
Quinsam Hatchery: (f)					
Brood stock	676	887	NA	1,563	
Hatchery trash/sale	1,662	24	165	1,851	
Live transfer to Elk Falls Channel (i)	208	204	0	412	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:	4,949	3,307	NA	8,256	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).
(i) Fish removed from the Quinsam River and transferred to Elk Falls Channel.

Appendix 4 - 00. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 2000. Confidence limits were determined assuming R is normally distributed.

Area	Male	Female	Jack (g)	Total	
Campbell River: (a)					
Tags applied (c)	114	146	0	260	
Total carcasses examined (d)	212	260	0	472	
Tagged recoveries (e)	62	94	0	156	
Petersen estimate	388	403	NA	791	(h)
Lower 95% CL	334	365	NA	699	(h)
Upper 95% CL	442	441	NA	883	(h)
Quinsam River:					
Live transfer above Counting Fence (f)	539	401	42	982	
Below Counting Fence (b)					
Tags applied (c)	247	321	3	571	
Total carcasses examined (d)	1,346	1,669	12	3,027	
Tagged recoveries (e)	188	261	0	449	
Petersen estimate	1,766	2,051	NA	3,818	(h)
Lower 95% CL	1,653	1,953	NA	3,606	(h)
Upper 95% CL	1,880	2,150	NA	4,030	(h)
Quinsam Hatchery: (f)					
Brood stock	756	811	2	1,569	
Hatchery trash/sale	778	17	70	865	
Live transfer to Elk Falls Channel (i)	150	150	0	300	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:	4,377	3,833	NA	8,211	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).
(i) Fish removed from the Quinsam River and transferred to Elk Falls Channel.

Appendix 4 - 01. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 2001. Confidence limits were determined assuming R is normally distributed.

Area	Male	Female	Jack (g)	Total	
Campbell River: (a)					
Tags applied (c)	92	96	1	189	
Total carcasses examined (d)	235	245	1	481	
Tagged recoveries (e)	43	54	0	97	
Petersen estimate	498	433	NA	931	(h)
Lower 95% CL	402	367	NA	769	(h)
Upper 95% CL	593	499	NA	1,092	(h)
Quinsam River:					
Live transfer above Counting Fence (f)	1,198	686	18	1,902	
Enumerated through Counting Fence (f)	346	347	0	693	(j)
Below Counting Fence (b)					
Tags applied (c)	424	408	0	832	
Total carcasses examined (d)	3,159	3,054	13	6,226	
Tagged recoveries (e)	325	330	0	655	
Petersen estimate	4,119	3,774	NA	7,893	(h)
Lower 95% CL	3,915	3,606	NA	7,521	(h)
Upper 95% CL	4,323	3,941	NA	8,264	(h)
Quinsam Hatchery: (f)					
Brood stock	762	776	NA	1,538	
Hatchery trash/sale	1,140	126	31	1,297	
Live transfer to Elk Falls Channel (i)	220	183	0	403	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:	8,282	6,325	NA	14,607	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).
(i) Fish removed from the Quinsam River and transferred to Elk Falls Channel.
(j) Adults of unknown sex or mark status, apportioned to a 50/50 sex ratio.

Appendix 4 - 02. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 2002. Confidence limits were determined assuming R is normally distributed.

Area	Male	Female	Jack (g)	Total	
Campbell River: (a)					
Tags applied (c)	122	169	0	291	
Total carcasses examined (d)	360	450	0	810	
Tagged recoveries (e)	81	106	0	187	
Petersen estimate	541	716	NA	1,256	(h)
Lower 95% CL	481	644	NA	1,125	(h)
Upper 95% CL	600	787	NA	1,387	(h)
Quinsam River:					
Live transfer above Counting Fence (f)	893	593	0	1,486	
Enumerated through Counting Fence (f)	150	151	0	301	(j)
Below Counting Fence (b)					
Tags applied (c)	241	427	4	672	
Total carcasses examined (d)	2,329	3,565	11	5,905	
Tagged recoveries (e)	172	329	2	503	
Petersen estimate	3,258	4,624	NA	7,882	(h)
Lower 95% CL	3,009	4,397	NA	7,406	(h)
Upper 95% CL	3,507	4,851	NA	8,358	(h)
Quinsam Hatchery: (f)					
Brood stock	710	729	NA	1,439	
Hatchery trash/sale	476	43	13	532	
Live transfer to Elk Falls Channel (i)	78	86	0	164	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:	6,106	6,942	NA	13,047	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).
(i) Fish removed from the Quinsam River and transferred to Elk Falls Channel.
(j) Adults of unknown sex or mark status, apportioned to a 50/50 sex ratio.

Appendix 4 - 03. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 2003. Confidence limits were determined assuming R is normally distributed.

Area	Male	Female	Jack (g)	Total	
Campbell River: (a)					
Tags applied (c)	57	63	0	120	
Total carcasses examined (d)	163	209	0	372	
Tagged recoveries (e)	36	42	0	78	
Petersen estimate	256	312	NA	568	(h)
Lower 95% CL	213	264	NA	477	(h)
Upper 95% CL	299	359	NA	658	(h)
Quinsam River:					
Live transfer above Counting Fence (f)	234	65	1	300	
Enumerated through Counting Fence (f)	175	175	0	350	(j)
Below Counting Fence (b)					
Tags applied (c)	286	330	2	618	
Total carcasses examined (d)	1,161	1,503	2	2,666	
Tagged recoveries (e)	166	256	0	422	
Petersen estimate	1,996	1,936	NA	3,932	(h)
Lower 95% CL	1,815	1,834	NA	3,650	(h)
Upper 95% CL	2,177	2,038	NA	4,214	(h)
Quinsam Hatchery: (f)					
Brood stock	754	762	3	1,519	
Hatchery trash/sale	466	63	22	551	
Live transfer to Elk Falls Channel (i)	50	45	0	95	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:	3,931	3,358	NA	7,289	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).
(i) Fish removed from the Quinsam River and transferred to Elk Falls Channel.
(j) Adults of unknown sex or mark status, apportioned to a 50/50 sex ratio.

Appendix 4 - 04. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 2004. Confidence limits were determined assuming R is normally distributed.

Area		Male	Female	Jack (g)	Total	
Campbell River: (a)						
Tags applied (c)		84	89	0	173	
Total carcasses examined (d)		233	268	0	501	
Tagged recoveries (e)		29	44	0	73	
	Petersen estimate	662	537	NA	1,199	(h)
	Lower 95% CL	487	437	NA	923	(h)
	Upper 95% CL	837	637	NA	1,475	(h)
Quinsam River:						
Live transfer above Counting Fence (f)		1,339	488	34	1,861	
Enumerated through Counting Fence (f)		302	302	0	604	(i)
Below Counting Fence (b)						
Tags applied (c)		182	265	0	447	
Total carcasses examined (d)		1,169	1,564	3	2,736	
Tagged recoveries (e)		92	163	0	255	
	Petersen estimate	2,301	2,537	NA	4,839	(h)
	Lower 95% CL	1,988	2,310	NA	4,299	(h)
	Upper 95% CL	2,614	2,764	NA	5,379	(h)
Quinsam Hatchery: (f)						
Brood stock		705	704	0	1,409	
Hatchery trash/sale		163	23	11	197	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:		5,472	4,591	NA	10,064	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).
(i) Adults of unknown sex or mark status, apportioned to a 50/50 sex ratio.

Appendix 4 - 05. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 2005. Confidence limits were determined assuming R is normally distributed.

Area		Male	Female	Jack (g)	Total	
Campbell River: (a)						
Tags applied (c)		53	57	0	110	
Total carcasses examined (d)		132	133	0	265	
Tagged recoveries (e)		25	31	0	56	
	Petersen estimate	275	242	NA	517	(h)
	Lower 95% CL	208	193	NA	401	(h)
	Upper 95% CL	343	290	NA	633	(h)
Quinsam River:						
Live transfer above Counting Fence (f)		1,435	499	99	2,033	
Enumerated through Counting Fence (f)		10	9	0	19	(i)
Below Counting Fence (b)						
Tags applied (c)		129	215	1	345	
Total carcasses examined (d)		704	1,257	2	1,963	
Tagged recoveries (e)		68	137	0	205	
	Petersen estimate	1,327	1,968	NA	3,295	(h)
	Lower 95% CL	1,125	1,782	NA	2,907	(h)
	Upper 95% CL	1,530	2,154	NA	3,683	(h)
Quinsam Hatchery: (f)						
Brood stock		833	824	6	1,663	
Hatchery trash/sale		225	23	18	266	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:		4,105	3,565	NA	7,670	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).
(i) Adults of unknown sex or mark status, apportioned to a 50/50 sex ratio.

Appendix 4 - 06. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 2006. Confidence limits were determined assuming R is normally distributed.

Area	Male	Female	Jack (g)	Total	
Campbell River: (a)					
Tags applied (c)	129	183	0	312	
Total carcasses examined (d)	338	480	0	818	
Tagged recoveries (e)	77	102	0	179	
Petersen estimate	564	858	NA	1,422	(h)
Lower 95% CL	495	761	NA	1,256	(h)
Upper 95% CL	633	955	NA	1,589	(h)
Quinsam River:					
Live transfer above Counting Fence (f)	1,196	509	42	1,747	
Below Counting Fence (b)					
Tags applied (c)	70	143	0	213	
Total carcasses examined (d)	823	1,384	9	2,216	
Tagged recoveries (e)	33	79	0	112	
Petersen estimate	1,720	2,492	NA	4,212	(h)
Lower 95% CL	1,317	2,141	NA	3,457	(h)
Upper 95% CL	2,123	2,843	NA	4,966	(h)
Quinsam Hatchery: (f)					
Brood stock	802	808	3	1,613	
Hatchery trash/sale	505	40	31	576	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:	4,787	4,707	NA	9,494	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).

Appendix 4 - 07. Petersen population estimates, confidence limits, and enumeration data for Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery based on in situ Chinook carcass tagging and recovery of carcasses, 2007. Confidence limits were determined assuming R is normally distributed.

Area	Male	Female	Jack (g)	Total	
Campbell River: (a)					
Tags applied (c)	60	90	0	150	
Total carcasses examined (d)	149	204	0	353	
Tagged recoveries (e)	31	50	0	81	
Petersen estimate	285	365	NA	650	(h)
Lower 95% CL	225	308	NA	533	(h)
Upper 95% CL	345	422	NA	767	(h)
Quinsam River:					
Live transfer above Counting Fence (f)	1,117	582	62	1,761	
Enumerated through Counting Fence (f)	181	182	0	363	(i)
Below Counting Fence (b)					
Tags applied (c)	115	217	3	335	
Total carcasses examined (d)	386	704	4	1,094	
Tagged recoveries (e)	56	123	1	180	
Petersen estimate	787	1,238	NA	2,025	(h)
Lower 95% CL	653	1,109	NA	1,762	(h)
Upper 95% CL	920	1,368	NA	2,288	(h)
Quinsam Hatchery: (f)					
Brood stock	862	868	4	1,734	
Hatchery trash/sale	188	38	15	241	
Live transfer to Cold Creek	1	0	0	1	
TOTAL SYSTEM ESCAPEMENT ESTIMATE:	3,421	3,273	NA	6,694	(h)

(a) From Appendix 17 - carcasses examined, tagged, and tagged recoveries, by date in the Campbell River.
(b) From Appendix 18 - carcasses examined, tagged, and tagged recoveries, by date in the Quinsam River.
(c) Total number of fish tagged and operculum hole punched.
(d) Total number of fish examined (tagged and untagged recoveries) less number of fish observed on or before first day of tagging.
(e) Total recoveries possessing a tag and/or an operculum punch (secondary mark).
(f) Confidence limits not applicable.
(g) Jacks (Petersen estimates were not calculated due to low sample size).
(h) Totals not including jacks - see (g).
(i) Adults of unknown sex or mark status, apportioned to a 50/50 sex ratio.

Appendix 5. Age composition of Campbell River Chinook salmon returns, 1999-2007 (determined from dead recovery).

Year	Sex and Age		Unmk	Ad/CWT	Total	Percent (b)		N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
1999	Males											
	3		19	0	19	23.8		19	751	95.6	705	797
	4		42	4	46	57.5		45	782	97.5	753	811
	5		12	1	13	16.3		13	785	39.2	761	809
	6		2	0	2	2.5		2	710	141.4		
		Total Aged	75	5	80	100.0		79	773	90.9	753	794
	Females											
	3		2	1	3	2.3		3	802	54.8	665	938
	4		48	9	57	44.2		57	784	68.1	766	802
	5		64	4	68	52.7		66	805	76.4	787	824
	6		1	0	1	0.8		1	830			
		Total Aged	115	14	129	100.0		127	796	72.4	783	808
2000	Males (a)											
	2		1	0	1	1.0		1	480			
	3		15	0	15	14.3	(14.4)	15	594	46.3	569	620
	4		68	3	71	67.6	(68.3)	71	780	61.7	765	795
	5		13	3	16	15.2	(15.4)	16	844	52.2	816	872
	6		2	0	2	1.9	(1.9)	2	980	56.6		
		Total Aged	99	6	105	100.0	(100.0)	105	764	101.3	744	784
	Females											
	4		99	3	102	65.0		101	783	52.7	772	793
	5		46	7	53	33.8		53	830	51.5	815	844
	6		1	1	2	1.3		2	820	42.4		
		Total Aged	146	11	157	100.0		156	799	56.5	790	808
2001	Males (a)											
	3		11	0	11	10.7	(10.7)	11	593	45.9	562	624
	4		48	7	55	53.4	(53.4)	55	749	67.4	731	767
	5		33	4	37	35.9	(35.9)	37	863	67.3	840	885
		Total Aged	92	11	103	100.0	(100.0)	103	773	104.6	753	794
	Females											
	4		36	4	40	37.0		40	762	48.8	747	778
	5		60	7	67	62.0		67	842	49.4	830	854
	6		1	0	1	0.9		1	820			
		Total Aged	97	11	108	100.0		108	812	62.2	800	824

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 5. Age composition of Campbell River Chinook salmon returns, 1999-2007. (Cont'd)

Year	Sex and Age		Unmk	Ad/CWT	Total	Percent (b)	N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
2002	Males										
	3		4	1	5	5.4	5	644	78.9	546	742
	4		41	5	46	49.5	44	794	59.9	776	812
	5		36	5	41	44.1	41	857	62.9	837	876
	6		1	0	1	1.1	1	830			
		Total Aged	82	11	93	100.0	91	814	79.9	798	831
	Females										
	4		39	9	48	32.7	46	766	40.7	753	778
	5		85	10	95	64.6	94	841	47.8	831	851
	6		4	0	4	2.7	4	878	40.3	813	942
		Total Aged	128	19	147	100.0	144	818	58.0	808	827
2003	Males										
	3		4	2	6	10.5	6	570	36.9	531	609
	4		30	1	31	54.4	30	735	69.3	709	761
	5		17	3	20	35.1	20	843	66.9	811	874
		Total Aged	51	6	57	100.0	56	756	104.5	728	784
	Females										
	4		21	1	22	32.8	22	746	34.5	731	762
	5		38	3	41	61.2	40	836	76.7	811	860
	6		4	0	4	6.0	4	823	118.1	635	1010
		Total Aged	63	4	67	100.0	66	805	79.5	786	825
2004	Males										
	3		14	2	16	17.0	16	591	65.4	556	626
	4		36	6	42	44.7	42	752	63.6	732	772
	5		32	3	35	37.2	35	813	54.8	794	831
	6		1	0	1	1.1	1	920			
		Total Aged	83	11	94	100.0	94	749	98.5	729	769
	Females										
	4		29	3	32	33.0	32	750	49.4	732	768
	5		57	8	65	67.0	65	823	56.5	809	837
		Total Aged	86	11	97	100.0	97	799	64.0	786	812

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 5. Age composition of Campbell River Chinook salmon returns, 1999-2007. (Cont'd)

Year	Sex and Age	Unmk	Ad/CWT	Total	Percent (b)		N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
2005	Males (a)										
	2	1	0	1	1.8		1	490			
	3	5	0	5	9.1	(9.3)	5	620	80.9	520	720
	4	35	2	37	67.3	(68.5)	37	748	47.6	733	764
	5	12	0	12	21.8	(22.2)	11	807	104.4	737	877
	Total Aged	53	2	55	100.0	(100.0)	54	744	87.2	720	768
	Females										
	4	30	1	31	51.7		31	788	52.4	769	807
	5	23	2	25	41.7		25	834	61.2	809	859
	6	4	0	4	6.7		4	860	40.8	795	925
	Total Aged	57	3	60	100.0		60	812	60.6	796	828
2006	Males										
	3	10	5	15	13.4		14	631	50.6	602	660
	4	50	6	56	50.0		55	747	69.2	728	766
	5	39	2	41	36.6		40	842	49.1	826	857
	Total Aged	99	13	112	100.0		109	767	90.9	750	784
	Females										
	3	2	0	2	1.3		2	615	49.5		
	4	47	7	54	34.2		54	757	44.6	745	770
	5	98	2	100	63.3		100	810	59.0	799	822
	6	2	0	2	1.3		2	860	42.4		
	Total Aged	149	9	158	100.0		158	790	63.1	781	800
2007	Males										
	3	3	1	4	6.8		4	598	60	503	692
	4	35	5	40	67.8		40	757	65	736	778
	5	14	0	14	23.7		14	869	41	845	892
	6	1	0	1	1.7		1	900			
	Total Aged	53	6	59	100.0		59	775	91	751	799
	Females										
	3	1	0	1	1.1		1	620			
	4	48	3	51	58.0		51	738	45	725	750
	5	34	1	35	39.8		35	806	48	789	822
	6	1	0	1	1.1		1	800			
	Total Aged	84	4	88	100.0		88	764	59	752	777

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 6. Age composition of Quinsam River Chinook salmon returns, 1999-2007 (determined from dead recovery).

Year	Sex and Age		Unmk	Ad/CWT	Total	Percent (b)		N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
1999	Males											
	3		41	13	54	42.2		54	624	57.2	608	640
	4		51	10	61	47.7		60	743	63.5	726	759
	5		12	1	13	10.2		13	842	56.8	808	877
		Total Aged	104	24	128	100.0		127	702	94.9	686	719
	Females											
	3		11	0	11	6.1		11	665	45.1	635	696
	4		94	21	115	63.9		115	752	49.3	743	761
	5		42	12	54	30.0		53	803	60.2	787	820
		Total Aged	147	33	180	100.0		179	762	62.3	752	771
2000	Males											
	3		15	19	34	20.0		34	579	42.3	564	594
	4		79	48	127	74.7		126	767	65.2	755	778
	5		5	3	8	4.7		8	858	35.2	829	888
	6		1	0	1	0.6		1	900			
		Total Aged	100	70	170	100.0		169	734	100.6	719	749
	Females											
	3		0	1	1	0.4		1	775			
	4		131	101	232	86.9		232	759	47.4	753	765
	5		18	15	33	12.4		33	819	38.2	805	832
	6		1	0	1	0.4		1	895			
		Total Aged	150	117	267	100.0		267	767	50.8	761	773
2001	Males (a)											
	2		0	1	1	0.3		1	435			
	3		11	43	54	18.2	(18.3)	54	608	57.4	593	624
	4		76	124	200	67.6	(67.8)	200	738	55.2	730	746
	5		12	29	41	13.9	(13.9)	41	813	61.0	794	833
		Total Aged	99	197	296	100.0	(100.0)	296	724	84.4	714	734
	Females											
	3		1	2	3	0.7		3	637	50.3	512	762
	4		64	150	214	50.5		214	746	44.3	740	752
	5		84	122	206	48.6		206	815	48.3	809	822
	6		0	1	1	0.2		1	900			
		Total Aged	149	275	424	100.0		424	779	59.3	773	785

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 6. Age composition of Quinsam River Chinook salmon returns, 1999-2007. (Cont'd)

Year	Sex and Age		Unmk	Ad/CWT	Total	Percent (b)		N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
2002	Males											
	3		9	26	35	13.9		35	592	45.0	577	608
	4		57	92	149	59.4		149	740	61.8	730	750
	5		33	33	66	26.3		65	834	48.8	822	846
	6		0	1	1	0.4		1	820			
		Total Aged	99	152	251	100.0		250	744	92.4	733	756
	Females											
	3		1	1	2	0.5		2	600	84.9		
	4		62	92	154	40.1		153	759	46.1	752	767
	5		87	141	228	59.4		228	822	58.0	815	830
		Total Aged	150	234	384	100.0		383	796	63.4	790	802
2003	Males (a)											
	2		1	0	1	0.7		1	360			
	3		16	9	25	17.2	(17.4)	24	587	49.6	566	608
	4		56	26	82	56.6	(56.9)	81	741	58.9	728	754
	5		22	13	35	24.1	(24.3)	35	831	55.5	812	850
	6		1	1	2	1.4	(1.4)	2	880	14.1	753	1007
		Total Aged	96	49	145	100.0	(100.0)	143	737	102.0	720	754
	Females											
	3		2	0	2	1.0		2	680	14.1	553	807
	4		72	31	103	49.3		103	751	50.5	741	761
	5		73	28	101	48.3		101	815	49.4	806	825
	6		1	2	3	1.4		3	900	85.4	688	1112
		Total Aged	148	61	209	100.0		209	783	61.7	775	792
2004	Males											
	3		24	16	40	24.2		40	622	77.1	597	646
	4		50	34	84	50.9		84	745	55.1	733	757
	5		29	12	41	24.8		40	787	81.4	761	813
		Total Aged	103	62	165	100.0		164	725	91.3	711	739
	Females											
	3		3	2	5	2.3		5	634	61.1	558	710
	4		58	37	95	42.8		94	747	44.7	738	757
	5		82	36	118	53.2		116	791	60.5	780	802
	6		3	1	4	1.8		4	833	71.4	719	946
		Total Aged	146	76	222	100.0		219	769	62.3	761	778

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 6. Age composition of Quinsam River Chinook salmon returns, 1999-2007. (Cont'd)

Year	Sex and Age		Unmk	Ad/CWT	Total	Percent (b)		N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
2005	Males (a)											
	2		1	0	1	0.7		1	390			
	3		10	3	13	8.7	(8.8)	13	575	68.0	534	616
	4		68	40	108	72.5	(73.0)	107	748	58.6	736	759
	5		20	6	26	17.4	(17.6)	26	808	59.8	784	832
	6		0	1	1	0.7	(0.7)	1	760			
		Total Aged	99	50	149	100.0	(100.0)	148	741	87.0	726	755
	Females											
	3		2	1	3	1.5		3	687	132.0	359	1015
	4		99	31	130	63.4		127	743	45.8	735	751
	5		50	21	71	34.6		71	795	51.2	783	808
	6		1	0	1	0.5		1	730			
		Total Aged	152	53	205	100.0		202	760	55.8	753	768
2006	Males (a)											
	2		1	0	1	0.9		1	440			
	3		14	7	21	19.4	(19.6)	21	616	53.3	591	640
	4		34	21	55	50.9	(51.4)	55	737	66.0	719	755
	5		15	15	30	27.8	(28.0)	30	794	64.5	770	818
	6		1	0	1	0.9	(0.9)	1	780			
		Total Aged	65	43	108	100.0	(100.0)	108	727	91.5	709	744
	Females											
	3		1	4	5	2.4		5	676	101.4	550	802
	4		67	48	115	55.8		114	741	49.7	732	750
	5		37	49	86	41.7		86	791	48.7	781	802
		Total Aged	105	101	206	100.0		205	761	57.8	753	768
2007	Males (a)											
	2		1	0	1	0.9		1	400			
	3		7	1	8	6.9	(7.0)	7	574	54.4	524	625
	4		83	14	97	83.6	(84.3)	96	746	62.8	733	758
	5		9	1	10	8.6	(8.7)	10	859	39.6	831	887
		Total Aged	100	16	116	100.0	(100.0)	114	742	87.2	726	758
	Females											
	3		1	0	1	0.6		1	610			
	4		83	16	99	56.6		99	744	41.0	735	752
	5		61	10	71	40.6		71	787	40.5	778	797
	6		2	2	4	2.3		4	813	57.4	721	904
		Total Aged	147	28	175	100.0		175	762	48.0	755	769

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 7. Age composition of Quinsam Hatchery Chinook salmon returns, 1999-2007 (determined from rack recovery).

Year	Sex and Age		Unmk	Ad/CWT	Total	Percent (b)		N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
1999	Males (a)											
	2		7	14	21	4.8		21	381	51.2	357	404
	3		23	190	213	48.5	(51.0)	212	604	58.6	596	612
	4		58	117	175	39.9	(41.9)	174	734	47.7	727	742
	5		12	18	30	6.8	(7.2)	30	805	54.8	785	826
		Total Aged	100	339	439	100.0	(100.0)	437	659	108.8	649	669
	Females											
	3		4	3	7	2.2		7	674	80.0	600	748
	4		72	111	183	57.2		179	745	38.4	740	751
	5		73	55	128	40.0		123	807	45.0	798	815
	6		1	1	2	0.6		2	793	58.0		
		Total Aged	150	170	320	100.0		311	768	53.5	762	774
2000	Males (a)											
	1		0	1	1	0.3		1	200			
	2		0	14	14	3.9		13	408	36.2	380	436
	3		5	125	130	36.5	(38.1)	48	566	55.4	550	583
	4		87	112	199	55.9	(58.4)	150	744	46.1	737	752
	5		8	4	12	3.4	(3.5)	11	827	78.2	775	880
		Total Aged	100	256	356	100.0	(100.0)	223	688	119.8	672	704
	Females											
	4		128	98	226	83.4		176	756	45.2	750	763
	5		22	22	44	16.2		36	792	39.0	779	805
	6		0	1	1	0.4		1	806			
		Total Aged	150	121	271	100.0		213	763	46.2	756	769
2001	Males (a)											
	2		0	2	2	0.5		2	421	11.3		
	3		8	105	113	26.0	(26.1)	50	605	42.9	593	618
	4		79	212	291	66.9	(67.2)	219	734	53.2	727	741
	5		12	17	29	6.7	(6.7)	24	812	61.0	786	837
		Total Aged	99	336	435	100.0	(100.0)	295	716	79.7	707	725
	Females											
	3		2	7	9	2.8		7	662	44.6	620	703
	4		90	99	189	59.6		167	742	47.4	735	750
	5		58	60	118	37.2		104	816	45.0	807	825
	6		0	1	1	0.3		1	790			
		Total Aged	150	167	317	100.0		279	768	60.5	761	775

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 7. Age composition of Quinsam Hatchery Chinook salmon returns, 1999-2007. (Cont'd)

Year	Sex and Age		Unmk	Ad/CWT	Total	Percent (b)		N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
2002	Males (a)											
	2		0	1	1	0.4		1	380			
	3		8	48	56	21.2	(21.3)	56	581	55.8	566	596
	4		58	97	155	58.7	(58.9)	155	741	50.5	733	749
	5		34	18	52	19.7	(19.8)	52	816	49.4	802	830
		Total Aged	100	164	264	100.0	(100.0)	264	720	96.1	709	732
	Females											
	4		46	61	107	41.0		107	747	42.2	739	756
	5		101	51	152	58.2		152	820	43.7	813	827
	6		1	1	2	0.8		2	892	2.1		
		Total Aged	148	113	261	100.0		261	791	56.3	784	798
2003	Males (a)											
	1		0	1	1	0.4		1	188			
	2		0	3	3	1.3		3	377	14.5	341	413
	3		4	36	40	17.7	(18.0)	40	577	49.7	561	593
	4		81	76	157	69.5	(70.7)	157	726	54.0	717	734
	5		14	11	25	11.1	(11.3)	25	825	57.0	802	849
		Total Aged	99	127	226	100.0	(100.0)	226	703	101.2	690	717
	Females											
	4		87	36	123	54.2		123	740	42.0	733	748
	5		63	40	103	45.4		103	801	52.0	791	811
	6		1	0	1	0.4		1	910		910	910
		Total Aged	151	76	227	100.0		227	769	56.4	761	776
2004	Males (a)											
	1		0	1	1	0.3		1	173			
	2		0	8	8	2.6		8	392	38.3	360	424
	3		4	83	87	28.2	(29.1)	87	581	55.6	569	593
	4		62	90	152	49.4	(50.8)	151	718	56.1	709	727
	5		34	26	60	19.5	(20.1)	60	801	60.5	786	817
		Total Aged	100	208	308	100.0	(100.0)	307	685	112.0	673	698
	Females											
	3		0	1	1	0.4		1	605			
	4		51	54	105	42.2		105	725	42.0	717	733
	5		96	45	141	56.6		141	795	38.8	789	802
	6		2	0	2	0.8		2	854	42.4		
		Total Aged	149	100	249	100.0		249	765	54.5	759	772

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 7. Age composition of Quinsam Hatchery Chinook salmon returns, 1999-2007. (Cont'd)

Year	Sex and Age		Unmk	Ad/CWT	Total	Percent (b)		N	Mean Length (mm)	SD	95% CL Lower	95% CL Upper
2005	Males (a)											
	2		0	19	19	5.6		19	413	59.6	385	442
	3		5	79	84	24.9	(26.3)	84	603	53.4	592	615
	4		85	131	216	63.9	(67.7)	216	717	56.5	709	724
	5		10	8	18	5.3	(5.6)	18	794	69.3	759	828
	6		0	1	1	0.3	(0.3)	1	743			
		Total Aged	100	238	338	100.0	(100.0)	338	675	101.0	665	686
	Females											
	3		1	2	3	1.1		3	646	82.1	442	850
	4		97	82	179	67.8		179	735	41.4	728	741
	5		52	28	80	30.3		80	787	48.2	776	798
	6		0	2	2	0.8		2	761	4.2		
		Total Aged	150	114	264	100.0		264	750	51.1	743	756
2006	Males (a)											
	1		0	3	3	1.0		3	230	18.0	185	275
	2		2	10	12	3.8		12	413	50.7	380	445
	3		15	94	109	34.9	(36.7)	109	604	59.5	593	616
	4		59	81	140	44.9	(47.1)	140	735	55.9	726	744
	5		21	27	48	15.4	(16.2)	48	795	57.8	778	812
		Total Aged	97	215	312	100.0	(100.0)	312	681	115.4	668	694
	Females											
	3		2	5	7	2.6		7	670	44.2	629	711
	4		71	69	140	51.9		140	745	40.0	738	752
	5		76	47	123	45.6		123	799	54.6	789	809
		Total Aged	149	121	270	100.0		270	768	56.4	761	774
2007	Males (a)											
	2		0	12	12	3.9		12	408	52.9	374	441
	3		2	56	58	19.0	(19.8)	58	576	52.4	562	589
	4		91	132	223	73.1	(76.1)	223	714	53.1	707	721
	5		6	5	11	3.6	(3.8)	11	768	61.2	727	809
	6		0	1	1	0.3	(.3)	1	661			
		Total Aged	99	206	305	100.0	(100.0)	305	677	94.5	667	688
	Females											
	3		1	2	3	1.1		3	631	66.4	466	796
	4		117	98	215	79.3		215	728	38.0	723	733
	5		31	20	51	18.8		51	797	54.6	782	813
	6		1	1	2	0.7		2	835	30.4		
		Total Aged	150	121	271	100.0		271	741	51.6	735	747

(a) Age-2 and age-1 are included with males.

(b) Figures in parentheses are age distributions in percent for adult males only (age-3 and older).

Appendix 8 - 99. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon returns, 1999.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	550-599	0	0	0	2	0	0	2	0	1	1	0	2
	600-649	0	0	2	4	0	1	7	0	0	1	0	1
	650-699	0	0	2	4	0	0	6	0	4	4	0	8
	700-749	0	0	3	5	2	0	10	0	12	5	0	17
	750-799	0	0	6	8	6	0	20	2	16	18	0	36
	800-849	0	0	2	9	3	1	15	0	16	18	1	35
	850-899	0	0	1	7	2	0	10	1	5	13	0	19
	900-949	0	0	2	6	0	0	8	0	3	4	0	7
	950-999	0	0	0	0	0	0	0	0	0	2	0	2
	Mean			751	782	785	710	773	802	784	805	830	796
	SD			96	98	39	141	91	55	68	76		72
	N			19	45	13	2	79	3	57	66	1	127
QUINSAM RIVER	500-549	0	0	4	0	0	0	4	0	0	0	0	0
	550-599	0	0	17	1	0	0	18	0	0	0	0	0
	600-649	0	0	11	4	0	0	15	5	2	1	0	8
	650-699	0	0	16	9	0	0	25	4	14	1	0	19
	700-749	0	0	5	18	1	0	24	1	39	5	0	45
	750-799	0	0	1	18	1	0	20	1	41	12	0	54
	800-849	0	0	0	7	7	0	14	0	17	23	0	40
	850-899	0	0	0	3	1	0	4	0	1	8	0	9
	900-949	0	0	0	0	3	0	3	0	1	3	0	4
	Mean			624	743	842		702	665	752	803		762
	SD			57	64	57		95	45	49	60		62
	N			54	60	13		127	11	115	53		179
QUINSAM HATCHERY	250-299	0	1	0	0	0	0	1	0	0	0	0	0
	300-349	0	4	0	0	0	0	4	0	0	0	0	0
	350-399	0	9	0	0	0	0	9	0	0	0	0	0
	400-449	0	5	0	0	0	0	5	0	0	0	0	0
	450-499	0	2	2	0	0	0	4	0	0	0	0	0
	500-549	0	0	34	0	0	0	34	0	0	0	0	0
	550-599	0	0	70	1	0	0	71	0	0	0	0	0
	600-649	0	0	57	7	0	0	64	3	0	0	0	3
	650-699	0	0	40	30	1	0	71	3	24	0	0	27
	700-749	0	0	7	71	4	0	82	0	70	12	0	82
	750-799	0	0	2	50	6	0	58	0	64	47	1	112
	800-849	0	0	0	15	13	0	28	1	21	43	1	66
	850-899	0	0	0	0	6	0	6	0	0	18	0	18
	900-949	0	0	0	0	0	0	0	0	0	3	0	3
	Mean		381	604	734	805		659	674	745	807	793	768
	SD		51	59	48	55		109	80	38	45	58	54
	N		21	212	174	30		437	7	179	123	2	311

Appendix 8 - 00. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon returns, 2000.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	450-499	0	1	0	0	0	0	1	0	0	0	0	0
	500-549	0	0	3	0	0	0	3	0	0	0	0	0
	550-599	0	0	4	0	0	0	4	0	0	0	0	0
	600-649	0	0	6	3	0	0	9	0	1	0	0	1
	650-699	0	0	2	5	0	0	7	0	6	0	0	6
	700-749	0	0	0	7	1	0	8	0	14	3	0	17
	750-799	0	0	0	26	2	0	28	0	43	10	1	54
	800-849	0	0	0	20	5	0	25	0	25	20	0	45
	850-899	0	0	0	10	6	0	16	0	10	14	1	25
	900-949	0	0	0	0	2	1	3	0	2	6	0	8
	1000-1049	0	0	0	0	0	1	1	0	0	0	0	0
	Mean		480	594	780	844	980	764		783	830	820	799
	SD			46	62	52	57	101		53	51	42	56
	N		1	15	71	16	2	105		101	53	2	156
QUINSAM RIVER	450-499	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	5	0	0	0	5	0	1	0	0	1
	550-599	0	0	15	1	0	0	16	0	0	0	0	0
	600-649	0	0	11	4	0	0	15	0	0	0	0	0
	650-699	0	0	2	14	0	0	16	0	20	0	0	20
	700-749	0	0	0	22	0	0	22	0	67	0	0	67
	750-799	0	0	0	43	0	0	43	1	96	9	0	106
	800-849	0	0	0	28	2	0	30	0	43	17	0	60
	850-899	0	0	0	11	5	0	16	0	5	5	1	11
	900-949	0	0	0	3	1	1	5	0	0	2	0	2
	Mean			579	767	858	900	734	775	759	819	895	767
	SD			42	65	35		101		47	38		51
	N			34	126	8	1	169	1	232	33	1	267
QUINSAM HATCHERY	200-249	1	0	0	0	0	0	1	0	0	0	0	0
	300-349	0	1	0	0	0	0	1	0	0	0	0	0
	350-399	0	5	0	0	0	0	5	0	0	0	0	0
	400-449	0	5	0	0	0	0	5	0	0	0	0	0
	450-499	0	2	7	0	0	0	9	0	1	0	0	1
	500-549	0	0	9	0	0	0	9	0	0	0	0	0
	550-599	0	0	19	1	0	0	20	0	0	0	0	0
	600-649	0	0	9	3	0	0	12	0	1	0	0	1
	650-699	0	0	4	19	0	0	23	0	10	0	0	10
	700-749	0	0	0	53	2	0	55	0	66	6	0	72
	750-799	0	0	0	62	2	0	64	0	70	11	0	81
	800-849	0	0	0	10	3	0	13	0	27	16	1	44
	850-899	0	0	0	2	2	0	4	0	1	3	0	4
	900-949	0	0	0	0	1	0	1	0	0	0	0	0
	950-999	0	0	0	0	1	0	1	0	0	0	0	0
	Mean	200	408	566	744	827		688		756	792	806	763
	SD		36	55	46	78		120		45	39		46
	N	1	13	48	150	11		223		176	36	1	213

Appendix 8 - 01. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon returns, 2001.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	550-599	0	0	4	0	0	0	4	0	0	0	0	0
	600-649	0	0	5	3	1	0	9	0	0	0	0	0
	650-699	0	0	1	8	0	0	9	0	3	0	0	3
	700-749	0	0	0	16	0	0	16	0	15	1	0	16
	750-799	0	0	0	15	5	0	20	0	13	11	0	24
	800-849	0	0	0	8	7	0	15	0	7	28	1	36
	850-899	0	0	0	4	10	0	14	0	2	18	0	20
	900-949	0	0	0	1	13	0	14	0	0	8	0	8
	1000-1049	0	0	0	0	1	0	1	0	0	1	0	1
	Mean			593	749	863		773		762	842	820	812
	SD			46	67	67		105		49	49		62
	N			11	55	37		103		40	67	1	108
QUINSAM RIVER	400-449	0	1	0	0	0	0	1	0	0	0	0	0
	450-499	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	6	0	0	0	6	0	0	0	0	0
	550-599	0	0	15	1	0	0	16	1	0	0	0	1
	600-649	0	0	20	8	0	0	28	1	3	0	0	4
	650-699	0	0	9	37	1	0	47	1	25	0	0	26
	700-749	0	0	2	63	3	0	68	0	81	16	0	97
	750-799	0	0	1	61	17	0	79	0	75	55	0	130
	800-849	0	0	0	27	7	0	34	0	30	83	0	113
	850-899	0	0	0	2	9	0	11	0	0	40	0	40
	900-949	0	0	0	1	3	0	4	0	0	12	1	13
	950-999	0	0	0	0	1	0	1	0	0	0	0	0
	Mean		435	608	738	813		724	637	746	815	900	779
	SD			57	55	61		84	50	44	48		59
	N		1	54	200	41		296	3	214	206	1	424
QUINSAM HATCHERY	400-449	0	2	0	0	0	0	2	0	0	0	0	0
	500-549	0	0	4	0	0	0	4	0	0	0	0	0
	550-599	0	0	19	0	0	0	19	0	0	0	0	0
	600-649	0	0	20	12	0	0	32	4	7	0	0	11
	650-699	0	0	6	52	1	0	59	2	20	0	0	22
	700-749	0	0	1	70	2	0	73	0	68	8	0	76
	750-799	0	0	0	61	6	0	67	1	51	26	1	79
	800-849	0	0	0	23	8	0	31	0	20	43	0	63
	850-899	0	0	0	0	5	0	5	0	1	26	0	27
	900-949	0	0	0	0	2	0	2	0	0	1	0	1
	950-999	0	0	0	1	0	0	1	0	0	0	0	0
	Mean		421	605	734	812		716	662	742	816	790	768
	SD		11	43	53	61		80	45	47	45		61
	N		2	50	219	24		295	7	167	104	1	279

Appendix 8 - 02. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon returns, 2002.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	600-649	0	0	1	1	0	0	2	0	0	0	0	0
	650-699	0	0	2	1	1	0	4	0	2	0	0	2
	700-749	0	0	1	5	1	0	7	0	14	3	0	17
	750-799	0	0	0	16	4	0	20	0	21	7	0	28
	800-849	0	0	0	14	9	1	24	0	8	46	1	55
	850-899	0	0	0	5	14	0	19	0	1	29	1	31
	900-949	0	0	0	2	10	0	12	0	0	6	2	8
	950-999	0	0	0	0	2	0	2	0	0	2	0	2
	1000-1049	0	0	0	0	0	0	0	0	0	1	0	1
	Mean			644	794	857	830	814		766	841	878	818
	SD			79	60	63		80		41	48	40	58
	N			5	44	41	1	91		46	94	4	144
QUINSAM RIVER	300-349	0	0	0	0	0	0	0	0	0	1	0	1
	450-499	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	3	0	0	0	3	1	0	0	0	1
	550-599	0	0	15	3	0	0	18	0	0	0	0	0
	600-649	0	0	11	6	0	0	17	0	0	1	0	1
	650-699	0	0	5	21	0	0	26	1	16	1	0	18
	700-749	0	0	0	53	2	0	55	0	39	10	0	49
	750-799	0	0	0	39	9	0	48	0	69	46	0	115
	800-849	0	0	0	18	32	1	51	0	23	96	0	119
	850-899	0	0	0	9	14	0	23	0	5	62	0	67
	900-949	0	0	0	0	8	0	8	0	1	11	0	12
	Mean			592	740	834	820	744	600	759	822		796
	SD			45	62	49		92	85	46	58		63
	N			35	149	65	1	250	2	153	228		383
QUINSAM HATCHERY	350-399	0	1	0	0	0	0	1	0	0	0	0	0
	450-499	0	0	3	0	0	0	3	0	0	0	0	0
	500-549	0	0	13	0	0	0	13	0	0	0	0	0
	550-599	0	0	22	0	0	0	22	0	0	0	0	0
	600-649	0	0	14	5	0	0	19	0	1	1	0	2
	650-699	0	0	2	28	0	0	30	0	8	1	0	9
	700-749	0	0	2	51	6	0	59	0	47	6	0	53
	750-799	0	0	0	55	9	0	64	0	42	35	0	77
	800-849	0	0	0	12	23	0	35	0	7	69	0	76
	850-899	0	0	0	4	11	0	15	0	1	37	2	40
	900-949	0	0	0	0	3	0	3	0	1	3	0	4
	Mean		380	581	741	816		720		747	820	892	791
	SD			56	51	49		96		42	44	2	56
	N		1	56	155	52		264		107	152	2	261

Appendix 8 - 03. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon returns, 2003.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	550-599	0	0	4	1	0	0	5	0	0	0	0	0
	600-649	0	0	1	3	0	0	4	0	0	2	0	2
	650-699	0	0	0	4	1	0	5	0	2	0	1	3
	700-749	0	0	0	8	0	0	8	0	6	1	0	7
	750-799	0	0	0	7	4	0	11	0	13	9	1	23
	800-849	0	0	0	5	6	0	11	0	1	10	0	11
	850-899	0	0	0	2	6	0	8	0	0	10	0	10
	900-949	0	0	0	0	1	0	1	0	0	7	2	9
	950-999	0	0	0	0	2	0	2	0	0	1	0	1
	Mean			570	735	843		756		746	836	823	805
	SD			37	69	67		105		35	77	118	80
	N			6	30	20		56		22	40	4	66
QUINSAM RIVER	350-399	0	1	0	0	0	0	1	0	0	0	0	0
	450-499	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	4	0	0	0	4	0	0	0	0	0
	550-599	0	0	10	0	0	0	10	0	0	0	0	0
	600-649	0	0	6	4	0	0	10	0	3	0	0	3
	650-699	0	0	3	12	0	0	15	2	10	0	0	12
	700-749	0	0	0	29	2	0	31	0	31	5	0	36
	750-799	0	0	0	20	6	0	26	0	40	31	0	71
	800-849	0	0	0	12	13	0	25	0	18	40	1	59
	850-899	0	0	0	4	10	2	16	0	0	21	1	22
	900-949	0	0	0	0	3	0	3	0	1	3	0	4
	950-999	0	0	0	0	1	0	1	0	0	1	1	2
	Mean		360	587	741	831	880	737	680	751	815	900	783
	SD			50	59	55	14	102	14	50	49	85	62
	N		1	24	81	35	2	143	2	103	101	3	209
QUINSAM HATCHERY	150-199	1	0	0	0	0	0	1	0	0	0	0	0
	350-399	0	3	0	0	0	0	3	0	0	0	0	0
	450-499	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	14	0	0	0	14	0	0	0	0	0
	550-599	0	0	9	0	0	0	9	0	0	0	0	0
	600-649	0	0	13	13	0	0	26	0	2	2	0	4
	650-699	0	0	3	40	0	0	43	0	16	1	0	17
	700-749	0	0	0	55	1	0	56	0	61	15	0	76
	750-799	0	0	0	31	8	0	39	0	35	29	0	64
	800-849	0	0	0	17	10	0	27	0	8	39	0	47
	850-899	0	0	0	1	2	0	3	0	1	16	0	17
	900-949	0	0	0	0	3	0	3	0	0	1	1	2
	950-999	0	0	0	0	1	0	1	0	0	0	0	0
	Mean	188	377	577	726	825		703		740	801	910	769
	SD		15	50	54	57		101		42	52		56
	N	1	3	40	157	25		226		123	103	1	227

Appendix 8 - 04. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon returns, 2004.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	400-449	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	550-599	0	0	8	0	0	0	8	0	0	0	0	0
	600-649	0	0	3	2	0	0	5	0	1	0	0	1
	650-699	0	0	1	6	0	0	7	0	1	3	0	4
	700-749	0	0	2	12	5	0	19	0	14	3	0	17
	750-799	0	0	0	11	10	0	21	0	11	11	0	22
	800-849	0	0	0	7	12	0	19	0	5	23	0	28
	850-899	0	0	0	4	5	0	9	0	0	21	0	21
	900-949	0	0	0	0	3	1	4	0	0	4	0	4
	Mean			591	752	813	920	749		750	823		799
	SD			65	64	55		98		49	56		64
	N			16	42	35	1	94		32	65		97
QUINSAM RIVER	400-449	0	0	0	0	0	0	0	0	0	1	0	1
	450-499	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	5	0	1	0	6	0	0	0	0	0
	550-599	0	0	11	1	0	0	12	2	0	0	0	2
	600-649	0	0	11	2	2	0	15	0	1	1	0	2
	650-699	0	0	7	10	0	0	17	3	10	1	0	14
	700-749	0	0	2	33	6	0	41	0	35	14	0	49
	750-799	0	0	0	22	11	0	33	0	34	43	2	79
	800-849	0	0	3	14	11	0	28	0	14	41	1	56
	850-899	0	0	0	2	7	0	9	0	0	12	0	12
	900-949	0	0	0	0	2	0	2	0	0	3	1	4
	Mean			622	745	787		725	634	747	791	833	769
	SD			77	55	81		91	61	45	60	71	62
	N			40	84	40		164	5	94	116	4	219
QUINSAM HATCHERY	150-199	1	0	0	0	0	0	1	0	0	0	0	0
	350-399	0	5	0	0	0	0	5	0	0	0	0	0
	400-449	0	2	2	0	0	0	4	0	0	0	0	0
	450-499	0	1	3	0	0	0	4	0	0	0	0	0
	500-549	0	0	21	1	0	0	22	0	0	0	0	0
	550-599	0	0	33	2	0	0	35	0	0	0	0	0
	600-649	0	0	22	17	2	0	41	1	3	0	0	4
	650-699	0	0	3	29	2	0	34	0	30	2	0	32
	700-749	0	0	2	59	6	0	67	0	41	12	0	53
	750-799	0	0	1	34	17	0	52	0	27	62	0	89
	800-849	0	0	0	9	22	0	31	0	4	49	1	54
	850-899	0	0	0	0	9	0	9	0	0	16	1	17
	900-949	0	0	0	0	2	0	2	0	0	0	0	0
	Mean	173	392	581	718	801		685	605	725	795	854	765
	SD		38	56	56	61		112		42	39	42	54
	N	1	8	87	151	60		307	1	105	141	2	249

Appendix 8 - 05. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon returns, 2005.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	450-499	0	1	0	0	0	0	1	0	0	0	0	0
	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	550-599	0	0	2	0	0	0	2	0	0	0	0	0
	600-649	0	0	0	0	1	0	1	0	0	0	0	0
	650-699	0	0	1	6	0	0	7	0	0	0	0	0
	700-749	0	0	1	11	2	0	14	0	9	1	0	10
	750-799	0	0	0	15	2	0	17	0	8	6	0	14
	800-849	0	0	0	4	3	0	7	0	9	7	1	17
	850-899	0	0	0	1	1	0	2	0	5	6	3	14
	900-949	0	0	0	0	1	0	1	0	0	5	0	5
	950-999	0	0	0	0	1	0	1	0	0	0	0	0
	Mean		490	620	748	807		744		788	834	860	812
	SD			81	48	104		87		52	61	41	61
	N		1	5	37	11		54		31	25	4	60
QUINSAM RIVER	350-399	0	1	0	0	0	0	1	0	0	0	0	0
	450-499	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	3	1	0	0	4	0	0	0	0	0
	550-599	0	0	6	2	0	0	8	1	0	0	0	1
	600-649	0	0	1	1	0	0	2	0	1	1	0	2
	650-699	0	0	1	16	0	0	17	1	23	1	0	25
	700-749	0	0	1	27	4	0	32	0	45	8	1	54
	750-799	0	0	0	43	9	1	53	0	42	27	0	69
	800-849	0	0	0	13	6	0	19	1	14	21	0	36
	850-899	0	0	0	3	4	0	7	0	2	12	0	14
	900-949	0	0	0	1	3	0	4	0	0	1	0	1
	Mean		390	575	748	808	760	741	687	743	795	730	760
	SD			68	59	60		87	132	46	51		56
	N		1	13	107	26	1	148	3	127	71	1	202
QUINSAM HATCHERY	200-249	0	1	0	0	0	0	1	0	0	0	0	0
	300-349	0	1	0	0	0	0	1	0	0	0	0	0
	350-399	0	4	0	0	0	0	4	0	0	0	0	0
	400-449	0	6	0	0	0	0	6	0	0	0	0	0
	450-499	0	7	1	0	0	0	8	0	0	0	0	0
	500-549	0	0	13	0	0	0	13	0	0	0	0	0
	550-599	0	0	25	7	0	0	32	1	2	0	0	3
	600-649	0	0	29	16	0	0	45	1	1	1	0	3
	650-699	0	0	14	53	3	0	70	0	22	2	0	24
	700-749	0	0	1	82	1	1	85	1	94	13	0	108
	750-799	0	0	1	43	3	0	47	0	50	33	2	85
	800-849	0	0	0	14	7	0	21	0	9	24	0	33
	850-899	0	0	0	1	3	0	4	0	1	6	0	7
	900-949	0	0	0	0	1	0	1	0	0	1	0	1
	Mean		413	603	717	794	743	675	646	735	787	761	750
	SD		60	53	56	69		101	82	41	48	4	51
	N		19	84	216	18	1	338	3	179	80	2	264

Appendix 8 - 06. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon returns, 2006.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	550-599	0	0	2	1	0	0	3	1	0	0	0	1
	600-649	0	0	4	4	0	0	8	0	1	0	0	1
	650-699	0	0	6	6	0	0	12	1	5	4	0	10
	700-749	0	0	1	14	1	0	16	0	13	10	0	23
	750-799	0	0	0	16	4	0	20	0	25	25	0	50
	800-849	0	0	0	10	16	0	26	0	9	35	1	45
	850-899	0	0	0	4	12	0	16	0	1	19	1	21
	900-949	0	0	0	0	7	0	7	0	0	6	0	6
	950-999	0	0	0	0	0	0	0	0	0	1	0	1
	Mean			631	747	842		767	615	757	810	860	790
	SD			51	69	49		91	49	45	59	42	63
	N			14	55	40		109	2	54	100	2	158
QUINSAM RIVER	400-449	0	1	0	0	0	0	1	0	0	0	0	0
	500-549	0	0	2	0	0	0	2	0	0	0	0	0
	550-599	0	0	5	1	0	0	6	1	0	0	0	1
	600-649	0	0	7	2	1	0	10	2	4	0	0	6
	650-699	0	0	6	10	1	0	17	1	12	2	0	15
	700-749	0	0	0	22	4	0	26	0	44	12	0	56
	750-799	0	0	1	11	7	1	20	0	40	32	0	72
	800-849	0	0	0	4	11	0	15	0	12	29	0	41
	850-899	0	0	0	4	5	0	9	1	1	9	0	11
	900-949	0	0	0	1	1	0	2	0	1	2	0	3
	Mean		440	616	737	794	780	727	676	741	791		761
	SD			53	66	64		92	101	50	49		58
	N		1	21	55	30	1	108	5	114	86		205
QUINSAM HATCHERY	150-199	1	0	0	0	0	0	1	0	0	0	0	0
	200-249	6	0	0	0	0	0	6	0	0	0	0	0
	300-349	0	1	0	0	0	0	1	0	0	0	0	0
	350-399	0	5	1	0	0	0	6	0	0	0	0	0
	400-449	0	5	0	0	0	0	5	0	0	0	0	0
	450-499	0	0	2	0	0	0	2	0	0	0	0	0
	500-549	0	1	11	0	0	0	12	0	0	0	0	0
	550-599	0	0	38	1	0	0	39	0	0	0	0	0
	600-649	0	0	38	11	0	0	49	2	1	0	0	3
	650-699	0	0	11	24	4	0	39	4	17	3	0	24
	700-749	0	0	5	44	2	0	51	0	59	21	0	80
	750-799	0	0	3	40	21	0	64	1	53	40	0	94
	800-849	0	0	0	18	13	0	31	0	10	34	0	44
	850-899	0	0	0	2	6	0	8	0	0	21	0	21
	900-949	0	0	0	0	2	0	2	0	0	3	0	3
	950-999	0	0	0	0	0	0		0	0	1	0	1
	Mean	221	413	604	735	795		681	670	745	799		768
	SD	22	51	59	56	58		115	44	40	55		56
	N	7	12	109	140	48		316	7	140	123		270

Appendix 8 - 07. Age-length distribution of Campbell River, Quinsam River, and Quinsam Hatchery chinook salmon returns, 2007.

Site	Length class (mm)	Male Age							Female Age				
		1	2	3	4	5	6	Total	3	4	5	6	Total
CAMPBELL RIVER	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	600-649	0	0	3	3	0	0	6	1	1	0	0	2
	650-699	0	0	0	3	0	0	3	0	6	0	0	6
	700-749	0	0	0	9	0	0	9	0	28	4	0	32
	750-799	0	0	0	16	0	0	16	0	9	9	0	18
	800-849	0	0	0	7	6	0	13	0	7	13	1	21
	850-899	0	0	0	0	3	0	3	0	0	9	0	9
	900-949	0	0	0	2	4	1	7	0	0	0	0	0
	950-999	0	0	0	0	1	0	1	0	0	0	0	0
	Mean			598	757	869	900	775	620	738	806	800	764
	SD			60	65	41		91		45	48		59
	N			4	40	14	1	59	1	51	35	1	88
QUINSAM RIVER	400-449	0	1	0	0	0	0	1	0	0	0	0	0
	450-499	0	0	1	0	0	0	1	0	0	0	0	0
	500-549	0	0	1	0	0	0	1	0	0	0	0	0
	550-599	0	0	3	0	0	0	3	0	0	0	0	0
	600-649	0	0	2	7	0	0	9	1	1	0	0	2
	650-699	0	0	0	10	0	0	10	0	12	2	0	14
	700-749	0	0	0	32	0	0	32	0	37	9	0	46
	750-799	0	0	0	26	0	0	26	0	41	28	2	71
	800-849	0	0	0	17	4	0	21	0	7	28	1	36
	850-899	0	0	0	3	4	0	7	0	1	4	1	6
	900-949	0	0	0		2	0	2	0	0	0	0	0
	950-999	0	0	0	1	0	0	1	0	0	0	0	0
	Mean		400	574	746	859		742	610	744	787	813	762
	SD			54	63	40		87		41	41	57	48
	N		1	7	96	10		114	1	99	71	4	175
QUINSAM HATCHERY	300-349	0	1	0	0	0	0	1	0	0	0	0	0
	350-399	0	6	0	0	0	0	6	0	0	0	0	0
	400-449	0	2	2	0	0	0	4	0	0	0	0	0
	450-499	0	2	2	0	0	0	4	0	0	0	0	0
	500-549	0	1	12	0	0	0	13	0	0	0	0	0
	550-599	0	0	24	5	0	0	29	2	0	0	0	2
	600-649	0	0	13	18	1	0	32	0	5	0	0	5
	650-699	0	0	4	65	0	1	70	0	37	1	0	38
	700-749	0	0	1	80	3	0	84	1	114	12	0	127
	750-799	0	0	0	46	3	0	49	0	53	13	0	66
	800-849	0	0	0	7	3	0	10	0	5	16	1	22
	850-899	0	0	0	1	1	0	2	0	1	7	1	9
	900-949	0	0	0	1	0	0	1	0	0	2	0	2
	Mean		408	576	714	768	661	677	631	728	797	835	741
	SD		53	52	53	61		95	66	38	55	30	52
	N		12	58	223	11	1	305	3	215	51	2	271

Appendix 9 - 99. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 1999.

Location	Age		Males (a) Number (b)	Males (a) Percent (c)		Females Number (b)	Females Percent (c)
Campbell River							
	3		131	23.8		15	2.3
	4		317	57.5		288	44.2
	5		90	16.3		344	52.7
	6		14	2.5		5	0.8
	Total	(d)	552	100.0	(d)	652	100.0
Quinsam River							
	3		419	42.2		59	6.1
	4		473	47.7		615	63.9
	5		101	10.2		289	30.0
	6		0	0.0		0	0.0
	Total	(d)	993	100.0	(d)	963	100.0
Quinsam Hatchery							
	3		1,191	51.0		20	2.2
	4		979	41.9		521	57.2
	5		168	7.2		364	40.0
	6		0	0.0		6	0.6
	Total	(d)	2,338	100.0	(d)	911	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 9 - 00. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 2000.

Location	Age	Males (a)		Females	
		Number (b)	Percent (c)	Number (b)	Percent (c)
Campbell River					
	3	56	14.4	0	0.0
	4	265	68.3	262	65.0
	5	60	15.4	136	33.8
	6	7	1.9	5	1.3
	Total (d)	388	100.0 (d)	403	100.0
Quinsam River					
	3	353	20.0	8	0.4
	4	1,319	74.7	1,782	86.9
	5	83	4.7	253	12.4
	6	10	0.6	8	0.4
	Total (d)	1,766	100.0 (d)	2,051	100.0
Quinsam Hatchery					
	3	585	38.1	0	0.0
	4	895	58.4	691	83.4
	5	54	3.5	134	16.2
	6	0	0.0	3	0.4
	Total (d)	1,534	100.0 (d)	828	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 9 - 01. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 2001.

Location	Age		Males (a) Number (b)	Males (a) Percent (c)		Females Number (b)	Females Percent (c)
Campbell River							
	3		53	10.7		0	0.0
	4		266	53.4		160	37.0
	5		179	35.9		269	62.0
	6		0	0.0		4	0.9
	Total	(d)	498	100.0	(d)	433	100.0
Quinsam River							
	3		754	18.3		27	0.7
	4		2,793	67.8		1,905	50.5
	5		572	13.9		1,834	48.6
	6		0	0.0		9	0.2
	Total	(d)	4,119	100.0	(d)	3,774	100.0
Quinsam Hatchery							
	3		496	26.1		26	2.8
	4		1,278	67.2		538	59.6
	5		127	6.7		336	37.2
	6		0	0.0		3	0.3
	Total	(d)	1,902	100.0	(d)	902	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 9 - 02. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 2002.

Location	Age		Males (a) Number (b)	Males (a) Percent (c)		Females Number (b)	Females Percent (c)
Campbell River							
	3		29	5.4		0	0.0
	4		268	49.5		234	32.7
	5		239	44.1		463	64.6
	6		6	1.1		19	2.7
	Total	(d)	541	100.0	(d)	716	100.0
Quinsam River							
	3		454	13.9		24	0.5
	4		1,934	59.4		1,854	40.1
	5		857	26.3		2,746	59.4
	6		13	0.4		0	0.0
	Total	(d)	3,258	100.0	(d)	4,624	100.0
Quinsam Hatchery							
	3		253	21.3		0	0.0
	4		699	58.9		316	41.0
	5		234	19.8		450	58.2
	6		0	0.0		6	0.8
	Total	(d)	1,186	100.0	(d)	772	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 9 - 03. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 2003.

Location	Age		Males (a) Number (b)	Males (a) Percent (c)		Females Number (b)	Females Percent (c)
Campbell River							
	3		27	10.5		0	0.0
	4		139	54.4		102	32.8
	5		90	35.1		191	61.2
	6		0	0.0		19	6.0
	Total	(d)	256	100.0	(d)	312	100.0
Quinsam River							
	3		347	17.4		19	1.0
	4		1,137	56.9		954	49.3
	5		485	24.3		936	48.3
	6		28	1.4		28	1.4
	Total	(d)	1,996	100.0	(d)	1,936	100.0
Quinsam Hatchery							
	3		220	18.0		0	0.0
	4		863	70.7		447	54.2
	5		137	11.3		374	45.4
	6		0	0.0		4	0.4
	Total	(d)	1,220	100.0	(d)	825	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 9 - 04. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 2004.

Location	Age		Males (a) Number (b)	Males (a) Percent (c)		Females Number (b)	Females Percent (c)
Campbell River							
	3		113	17.0		0	0.0
	4		296	44.7		177	33.0
	5		246	37.2		360	67.0
	6		7	1.1		0	0.0
	Total	(d)	662	100.0	(d)	537	100.0
Quinsam River							
	3		558	24.2		57	2.3
	4		1,171	50.9		1,086	42.8
	5		572	24.8		1,348	53.2
	6		0	0.0		46	1.8
	Total	(d)	2,301	100.0	(d)	2,537	100.0
Quinsam Hatchery							
	3		253	29.1		3	0.4
	4		441	50.8		307	42.2
	5		174	20.1		412	56.6
	6		0	0.0		6	0.8
	Total	(d)	868	100.0	(d)	727	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 9 - 05. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 2005.

Location	Age		Males (a) Number (b)	Males (a) Percent (c)		Females Number (b)	Females Percent (c)
Campbell River							
	3		25	9.3		0	0.0
	4		188	68.5		125	51.7
	5		61	22.2		101	41.7
	6		0	0.0		16	6.7
	Total	(d)	275	100.0	(d)	242	100.0
Quinsam River							
	3		117	8.8		29	1.5
	4		968	73.0		1,248	63.4
	5		233	17.6		682	34.6
	6		9	0.7		10	0.5
	Total	(d)	1,327	100.0	(d)	1,968	100.0
Quinsam Hatchery							
	3		279	26.3		10	1.1
	4		716	67.7		574	67.8
	5		60	5.6		257	30.3
	6		3	0.3		6	0.8
	Total	(d)	1,058	100.0	(d)	847	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 9 - 06. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 2006.

Location	Age		Males (a) Number (b)	Males (a) Percent (c)		Females Number (b)	Females Percent (c)
Campbell River							
	3		76	13.4		11	1.3
	4		282	50.0		293	34.2
	5		206	36.6		543	63.3
	6		0	0.0		11	1.3
	Total	(d)	564	100.0	(d)	858	100.0
Quinsam River							
	3		338	19.6		60	2.4
	4		884	51.4		1,391	55.8
	5		482	28.0		1,040	41.7
	6		16	0.9		0	0.0
	Total	(d)	1,720	100.0	(d)	2,492	100.0
Quinsam Hatchery							
	3		480	36.7		22	2.6
	4		616	47.1		440	51.9
	5		211	16.2		386	45.6
	6		0	0.0		0	0.0
	Total	(d)	1,307	100.0	(d)	848	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 9 - 07. Petersen estimates by age, of Chinook salmon escapements to the Campbell River, Quinsam River, and Quinsam Hatchery, 2007.

Location	Age		Males (a) Number (b)	Males (a) Percent (c)		Females Number (b)	Females Percent (c)
Campbell River							
	3		19	6.8		4	1.1
	4		193	67.8		212	58.0
	5		68	23.7		145	39.8
	6		5	1.7		4	1.1
	Total	(d)	285	100.0	(d)	365	100.0
Quinsam River							
	3		55	7.0		7	0.6
	4		664	84.3		700	56.6
	5		68	8.7		502	40.6
	6		0	0.0		28	2.3
	Total	(d)	787	100.0	(d)	1,238	100.0
Quinsam Hatchery							
	3		208	19.8		10	1.1
	4		799	76.1		719	79.3
	5		39	3.8		171	18.8
	6		4	0.3		7	0.7
	Total	(d)	1,050	100.0	(d)	906	100.0

(a) Does not include jacks; see Appendix 4 footnote (g).
(b) Number of fish by age calculated from the product of the percentage age (c) and escapement by sex (d).
(c) Percentage age distribution from Appendices 5, 6, and 7.
(d) Petersen estimates or Quinsam Hatchery recoveries from Appendix 4.
(e) Slight differences in calculations are due to rounding.

Appendix 10. Coded-wire tag (CWT) juvenile release data for hatchery-reared Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 1999-2007.

Quinsam Hatchery Tag Codes:

Brood Year	CWT Code	Release Numbers		Shed Tags	CWT Loss (%)	CWT Mark (%)	Days Held
		CWT	Untagged				
1993	180629	26,632	115,820	148	0.6	18.7	15
1994	020960	24,880	204,284	0	0.0	10.9	24
	020963	26,086	224,310	96	0.4	10.4	17
	181644	25,528	83,984	1,239	4.9	23.0	34
	181645	25,946	79,579	701	2.7	24.4	32
	181646	26,471	192,852	165	0.6	12.1	29
	181647	26,470	188,920	167	0.6	12.3	25
	181648	26,529	184,663	200	0.8	12.5	23
	181649	26,438	192,726	105	0.4	12.1	21
	181650	26,397	126,189	173	0.7	17.3	28
	181651	26,375	267,524	164	0.6	9.0	26
	181652	26,770	274,331	70	0.3	8.9	20
1995	181658	24,689	207,869	607	2.5	10.6	32
	181659	26,388	209,778	53	0.2	11.2	37
	181660	26,620	211,929	48	0.2	11.2	38
	181661	26,120	121,061	291	1.1	17.7	21
	182016	25,543	104,521	415	1.6	19.6	50
	182017	25,494	24,242	494	1.9	50.8	28
	182018	25,587	107,800	983	3.8	19.0	53
	182019	25,561	242,490	872	3.4	9.5	30
	182020	26,187	188,548	129	0.5	12.2	35
	182021	26,084	191,498	0	0.0	12.0	37
	182022	25,392	507,777	155	0.6	4.8	21
1996	181830	29,220	176,132	286	1.0	14.2	22
	181831	28,465	150,901	158	0.6	15.9	14
	182509	23,689	505,543	3,344	14.1	4.4	24
	182510	21,449	242,047	4,248	19.8	8.0	23
	182511	26,826	504,429	1,810	6.7	5.0	20
	182512	27,938	268,578	79	0.3	9.4	30
	182513	28,013	263,990	124	0.4	9.6	25
	182514	28,770	273,951	215	0.7	9.5	23
	182515	28,914	186,338	0	0.0	13.4	21
	182516	28,956	185,410	55	0.2	13.5	19
	182517	29,422	184,167	187	0.6	13.8	28
	182518	27,933	190,455	1,197	4.3	12.7	27
1997	183031	29,371	193,715	496	1.7	13.1	17
	183032	28,507	193,811	1,403	4.9	12.7	24
	183033	26,852	190,308	2,575	9.6	12.2	20
	183034	26,370	169,035	3,586	13.6	13.3	27
	183035	28,852	151,958	1,669	5.8	15.8	19
	183036	28,609	188,301	1,671	5.8	13.1	27
	183037	29,172	185,536	748	2.6	13.5	25
	183038	29,371	190,496	438	1.5	13.3	21

Appendix 10. Coded-wire tag (CWT) juvenile release data for hatchery-reared Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 1999-2007. Cont'd

Quinsam Hatchery Tag Codes:

Brood Year	CWT Code	Release Numbers		Shed Tags	CWT Loss (%)	CWT Mark (%)	Days Held
		CWT	Untagged				
1997	183039	30,284	143,753	36	0.1	17.4	26
Cont'd	183040	29,850	227,955	54	0.2	11.6	24
	183041	30,389	223,054	37	0.1	12.0	21
	183042	29,825	173,318	42	0.1	14.7	13
1998	183735	24,891	239,410	2,130	8.6	9.3	35
	183736	28,222	240,632	1,264	4.5	10.4	33
	183737	29,121	239,651	875	3.0	10.8	29
	183738	30,058	236,950	354	1.2	11.2	27
	183739	27,213	199,894	129	0.5	12.0	15
	183740	29,374	190,361	821	2.8	13.3	21
	183741	26,350	283,089	1,410	5.4	8.5	14
	183742	24,768	281,139	4,055	16.4	8.0	25
	183743	25,438	281,828	2,293	9.0	8.2	20
	183744	28,316	414,352	933	3.3	6.4	19
	183745	28,924	364,726	209	0.7	7.3	14
	183746	30,048	120,122	42	0.1	20.0	17
1999	183247	25,193	444,883	72	0.3	5.4	17-18
	183248	28,001	225,866	22	0.1	11.0	23
	183249	23,748	178,562	42	0.2	11.7	25
	183250	27,706	161,517	0	0.0	14.6	23
	183251	27,461	442,974	57	0.2	5.8	23-28
	183252	29,258	456,069	19	0.1	6.0	21-22
	183253	27,462	209,363	24	0.1	11.6	24
	183254	26,627	202,694	0	0.0	11.6	22
	183255	27,425	314,037	0	0.0	8.0	24
	183256	28,476	308,351	53	0.2	8.5	22
	183257	27,667	295,936	16	0.1	8.5	17
	183258	29,102	55,080	14	0.0	34.6	9
2000	184452	29,743	182,920	363	1.2	14.0	18
	184453	30,201	187,328	46	0.2	13.9	16
	184454	28,411	179,068	368	1.3	13.7	18
	184455	29,481	190,026	255	0.9	13.4	16
	184456	30,460	284,727	71	0.2	9.7	20
	184457	30,661	287,972	51	0.2	9.6	18
	184458	29,895	286,405	269	0.9	9.4	17
	184459	26,292	157,440	127	0.5	14.3	15
	184460	29,092	358,449	60	0.2	7.5	16
	184461	25,364	163,924	36	0.1	13.4	14
	184462	27,283	352,258	30	0.1	7.2	9-10
	184463	30,451	156,996	0	0.0	16.2	5
2001	184732	24,715	164,237	9	0.0	13.1	22
	184733	28,131	161,306	0	0.0	14.8	20

Appendix 10. Coded-wire tag (CWT) juvenile release data for hatchery-reared Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery by tag code, 1999-2007. Cont'd

Quinsam Hatchery Tag Codes:

Brood Year	CWT Code	Release Numbers		Shed Tags	CWT Loss (%)	CWT Mark (%)	Days Held
		CWT	Untagged				
2001	184734	30,964	185,305	58	0.2	14.3	26
Cont'd	184735	29,689	177,884	0	0.0	14.3	24
	184736	30,285	287,556	153	0.5	9.5	19
	184737	29,922	289,864	14	0.0	9.4	17
	184738	31,508	282,876	35	0.1	10.0	15
	184739	31,732	366,491	35	0.1	8.0	12-13
	184740	31,330	167,549	0	0.0	15.8	17
	184741	31,520	173,095	44	0.1	15.4	15
	184742	32,137	371,326	20	0.1	8.0	11-12
	184743	32,793	183,679	65	0.2	15.1	8
2002	185115	30,116	400,733	752	2.5	7.0	15
	185116	25,939	187,119	2,840	10.9	12.0	15
	185117	27,017	178,044	3,174	11.7	13.0	14
	185118	27,651	148,339	3,270	11.8	15.4	13
	185119	29,510	281,166	2,313	7.8	9.4	17
	185120	29,211	280,106	1,481	5.1	9.4	15
	185121	28,165	284,207	532	1.9	9.0	15
	185122	31,003	373,132	258	0.8	7.7	12-13
	185123	31,446	367,096	168	0.5	7.9	15-16
	185124	29,480	165,219	278	0.9	15.1	15
	185125	31,631	163,778	84	0.3	16.2	15
	185126	30,976	186,439	614	2.0	14.2	9
2003	182548	25,434	258,875	103	0.4	8.9	15
	182549	29,181	254,304	768	2.6	10.3	15
	184809	29,463	373,581	1,078	3.7	7.3	15-16
	184810	30,018	180,900	96	0.3	14.2	16
	184811	26,425	179,071	180	0.7	12.8	14
	184812	29,428	371,862	293	1.0	7.3	14
	184813	25,630	266,664	416	1.6	8.8	16
	185003	26,295	402,679	2,872	10.9	6.1	18-19
	185004	27,313	192,364	136	0.5	12.4	17
	185005	29,648	197,211	100	0.3	13.1	15
	185006	29,948	149,956	56	0.2	16.6	15
	185417	31,263	188,170	0	0.0	14.2	7
2004	182550	29,853	375,092	42	0.1	7.4	16
	182818	28,660	178,213	47	0.2	13.9	13
	182819	29,292	174,065	157	0.5	14.4	15
	182820	28,951	179,645	67	0.2	13.9	6
	183605	11,221	176,994	0	0.0	6.0	16
	184814	28,443	170,661	45	0.2	14.3	14
	184815	30,644	171,851	14	0.0	15.1	12
	184816	27,542	170,999	46	0.2	13.9	18

Appendix 10. Coded-wire tag (CWT) juvenile release data for hatchery-reared Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery by tag code, 1999-2007. Cont'd

Quinsam Hatchery Tag Codes:

Brood Year	CWT Code	Release Numbers CWT	Release Numbers Untagged	Shed Tags	CWT Loss (%)	CWT Mark (%)	Days Held
2004	184817	30,952	273,769	44	0.1	10.2	17
Cont'd	184818	29,965	271,073	13	0.0	10.0	15
	185020	30,463	275,249	14	0.0	10.0	17
	185025	30,572	176,931	0	0.0	14.7	15
2005	185228	24,457	187,120	1,162	4.8	11.5	20
	185829	25,759	452,619	299	1.2	5.4	14
	185831	27,308	117,475	1,095	4.0	18.7	15
	185835	27,767	173,034	1,207	4.3	13.7	13

Stray Tag Codes:

Brood Year	CWT Code	Release Numbers CWT	Release Numbers Untagged	Shed Tags	CWT Loss (%)	CWT Mark (%)	Release Facility
1996	182535	24,004	519,203	1,252	5.2	4.4	Puntledge R
1996	630127	198,332	3,028,367			6.1	Soos Cr /WDFW (a)
1997	183135	24,396	171,864	664	2.7	12.4	Puntledge R
1997	182845	28,785	75,370	1,698	5.9	27.2	Puntledge R
1997	183056	25,216	233,309	82	0.3	9.8	Tenderfoot Cr
1998	183728	25,234	200,270	0	0.0	11.2	Cowichan R
1998	630632	223,343	0			100.0	George Adams/WDFW (a)
1998	183821	31,776	420,492	648	2.0	7.0	Big Qualicum R
1998	183826	27,926	69,723	2,257	8.1	28.0	Puntledge R
1999	183838	30,745	71,152	405	1.3	30.1	Puntledge R
1999	184132	26,012	738,496	804	3.1	3.4	Big Qualicum R
2000	093256	158,052	0			100.0	Umatilla/ODFW (a)
2000	184556	28,235	888,660	0	0.0	3.1	Nitinat R
2000	184843	29,970	136,868	637	2.1	17.9	Puntledge R
2001	184628	25,119	26,389	0	0.0	48.8	Nanaimo R
2001	184641	25,255	225,799	0	0.0	10.1	Cowichan R
2001	631375	178,119	0			100.0	Soos Cr/WDFW (a)
2001	631405	105,829	14,001			88.3	Gorst Cr/SUQ (a)
2001	636322	223,933	0			100.0	George Adams/WDFW (a)
2001	184762	28,156	1,793,416	115	0.4	1.5	Little Qualicum R
2002	185150	27,183	689,761	73	0.3	3.8	Little Qualicum R
2002	185336	29,958	908,262	89	0.3	3.2	Puntledge R
2002	185508	43,840	568,546	1,827	4.2	7.1	Big Qualicum R
2003	185514	40,085	745,594	80	0.2	5.1	Big Qualicum R
2003	185731	33,165	1,175,075	525	1.6	2.7	Puntledge R
2004	183718	20,162	110,829	40	0.2	15.4	Puntledge R
2005	185030	23,925	131,078	863	3.6	15.3	Chilliwack R

(a) U.S. Tagcodes: WDFW - Washington Dept. of Fish & Wildlife
ODFW - Oregon Dept. of Fish & Wildlife
SUQ - Suquamish Tribe (WA)

Appendix 11 - 99. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 1999.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1996	181a30	0	0	0.00	0.00	1	0	1.00	0.00	15	1	15.03	1.00	16	1	16.03	1.00
	181831	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
	182509	0	0	0.00	0.00	3	0	3.01	0.00	11	0	11.02	0.00	14	0	14.02	0.00
	182510	0	0	0.00	0.00	0	0	0.00	0.00	13	0	13.02	0.00	13	0	13.02	0.00
	182511	0	0	0.00	0.00	1	0	1.00	0.00	5	0	5.01	0.00	6	0	6.01	0.00
	182512	0	0	0.00	0.00	2	0	2.00	0.00	18	0	18.03	0.00	20	0	20.04	0.00
	182513	0	0	0.00	0.00	1	0	1.00	0.00	25	0	25.04	0.00	26	0	26.05	0.00
	182514	0	0	0.00	0.00	2	0	2.00	0.00	38	1	38.07	1.00	40	1	40.07	1.00
	182515	0	0	0.00	0.00	1	0	1.00	0.00	18	0	18.03	0.00	19	0	19.03	0.00
	182516	0	0	0.00	0.00	1	0	1.00	0.00	17	1	17.03	1.00	18	1	18.03	1.00
	182517	0	0	0.00	0.00	0	0	0.00	0.00	13	0	13.02	0.00	13	0	13.02	0.00
	182518	0	0	0.00	0.00	1	0	1.00	0.00	16	0	16.03	0.00	17	0	17.03	0.00
	Subtotal	0	0	0.00	0.00	13	0	13.02	0.00	190	3	190.33	3.01	203	3	203.36	3.01
1995	181658	0	1	0.00	1.00	0	0	0.00	0.00	8	9	8.01	9.02	8	10	8.01	10.02
	181659	0	2	0.00	2.00	2	1	2.00	1.00	12	5	12.02	5.01	14	8	14.02	8.01
	181660	0	0	0.00	0.00	1	3	1.00	3.01	12	12	12.02	12.02	13	15	13.02	15.03
	181661	1	1	1.00	1.00	2	2	2.00	2.00	7	1	7.01	1.00	10	4	10.02	4.01
	182016	0	0	0.00	0.00	1	1	1.00	1.00	22	12	22.04	12.02	23	13	23.04	13.02
	182017	1	3	1.00	3.01	0	4	0.00	4.01	8	11	8.01	11.02	9	18	9.02	18.03
	182018	0	0	0.00	0.00	1	2	1.00	2.00	8	19	8.01	19.03	9	21	9.02	21.04
	182019	1	1	1.00	1.00	1	2	1.00	2.00	3	1	3.01	1.00	5	4	5.01	4.01
	182020	0	0	0.00	0.00	0	1	0.00	1.00	18	10	18.03	10.02	18	11	18.03	11.02
	182021	0	0	0.00	0.00	1	5	1.00	5.01	13	27	13.02	27.05	14	32	14.02	32.06
	182022	1	1	1.00	1.00	1	0	1.00	0.00	4	4	4.01	4.01	6	5	6.01	5.01
	Subtotal	4	9	4.01	9.02	10	21	10.02	21.04	115	111	115.20	111.20	129	141	129.23	141.25
1994	020960	0	1	0.00	1.00	0	3	0.00	3.01	0	1	0.00	1.00	0	5	0.00	5.01
	020963	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
	181644	0	2	0.00	2.00	0	2	0.00	2.00	2	4	2.00	4.01	2	8	2.00	8.01
	181645	0	0	0.00	0.00	0	2	0.00	2.00	1	3	1.00	3.01	1	5	1.00	5.01
	181646	0	0	0.00	0.00	1	1	1.00	1.00	3	6	3.01	6.01	4	7	4.01	7.01
	181647	0	0	0.00	0.00	0	1	0.00	1.00	2	6	2.00	6.01	2	7	2.00	7.01

Appendix 11 - 99. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 1999. Cont'd

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1994	181648	0	0	0.00	0.00	0	0	0.00	0.00	3	7	3.01	7.01	3	7	3.01	7.01
Cont'd	181649	0	0	0.00	0.00	0	2	0.00	2.00	3	6	3.01	6.01	3	8	3.01	8.01
	181650	1	0	1.00	0.00	0	0	0.00	0.00	1	9	1.00	9.02	2	9	2.00	9.02
	181651	0	0	0.00	0.00	0	1	0.00	1.00	1	6	1.00	6.01	1	7	1.00	7.01
	181652	0	1	0.00	1.00	0	0	0.00	0.00	2	6	2.00	6.01	2	7	2.00	7.01
	Subtotal	1	4	1.00	4.01	1	12	1.00	12.02	18	55	18.03	55.10	20	71	20.04	71.12
1993	180629	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
	Subtotal	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
Total Quinsam H CWT		5	13	5.01	13.02	24	33	24.04	33.06	323	170	323.57	170.30	352	216	352.62	216.38
Strays (d)																	
1996	182535	0	1	0.00	1.00	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00
	Subtotal	0	1	0.00	1.00	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00
Total CWT		5	14	5.01	14.02	24	33	24.04	33.06	323	170	323.57	170.30	352	217	352.62	217.38
No Data (500000)		0	0			0	0			0	0			0	0		
No Pin (800000)		0	3			0	4			8	3			8	10		
Lost Pin (900000)		0	0			0	0			1	0			1	0		
Observed Adipose		5	17			24	37			332	173			361	227		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

(d) CWT fish that have strayed to the system from other enhancement facilities (listed in Appendix 10).

Appendix 11 - 00. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2000.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1997	183031	0	0	0.00	0.00	0	0	0.00	0.00	10	0	10.04	0.00	10	0	10.04	0.00
	183032	0	0	0.00	0.00	1	0	1.00	0.00	6	0	6.02	0.00	7	0	7.02	0.00
	183033	0	0	0.00	0.00	3	1	3.01	1.00	1	0	1.00	0.00	4	1	4.01	1.00
	183034	0	0	0.00	0.00	1	0	1.00	0.00	8	0	8.03	0.00	9	0	9.03	0.00
	183035	0	0	0.00	0.00	4	0	4.01	0.00	27	0	27.10	0.00	31	0	31.11	0.00
	183036	0	0	0.00	0.00	0	0	0.00	0.00	11	0	11.04	0.00	11	0	11.04	0.00
	183037	0	0	0.00	0.00	1	0	1.00	0.00	15	0	15.05	0.00	16	0	16.06	0.00
	183038	0	0	0.00	0.00	1	0	1.00	0.00	7	0	7.02	0.00	8	0	8.03	0.00
	183039	0	0	0.00	0.00	6	0	6.02	0.00	21	0	21.07	0.00	27	0	27.10	0.00
	183040	0	0	0.00	0.00	0	0	0.00	0.00	7	0	7.02	0.00	7	0	7.02	0.00
	183041	0	0	0.00	0.00	1	0	1.00	0.00	8	0	8.03	0.00	9	0	9.03	0.00
	183042	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.02	0.00	6	0	6.02	0.00
	Subtotal	0	0	0.00	0.00	18	1	18.06	1.00	127	0	127.45	0.00	145	1	145.51	1.00
1996	181830	0	0	0.00	0.00	3	5	3.01	5.02	11	4	11.04	4.01	14	9	14.05	9.03
	181831	0	0	0.00	0.00	0	2	0.00	2.01	1	0	1.00	0.00	1	2	1.00	2.01
	182509	0	2	0.00	2.01	2	7	2.01	7.02	3	6	3.01	6.02	5	15	5.02	15.05
	182510	1	0	1.00	0.00	3	4	3.01	4.01	1	0	1.00	0.00	5	4	5.02	4.01
	182511	0	0	0.00	0.00	1	3	1.00	3.01	3	2	3.01	2.01	4	5	4.01	5.02
	182512	0	0	0.00	0.00	4	12	4.01	12.04	7	9	7.02	9.03	11	21	11.04	21.07
	182513	1	0	1.00	0.00	5	15	5.02	15.05	13	16	13.05	16.06	19	31	19.07	31.11
	182514	0	0	0.00	0.00	5	5	5.02	5.02	12	10	12.04	10.04	17	15	17.06	15.05
	182515	1	0	1.00	0.00	5	13	5.02	13.05	8	13	8.03	13.05	14	26	14.05	26.09
	182516	0	0	0.00	0.00	8	14	8.03	14.05	27	12	27.10	12.04	35	26	35.12	26.09
	182517	0	1	0.00	1.00	5	10	5.02	10.04	13	13	13.05	13.05	18	24	18.06	24.08
	182518	0	0	0.00	0.00	7	11	7.02	11.04	11	11	11.04	11.04	18	22	18.06	22.08
	Subtotal	3	3	3.01	3.01	48	101	48.17	101.36	110	96	110.39	96.34	161	200	161.57	200.71
1995	181658	0	0	0.00	0.00	0	2	0.00	2.01	1	0	1.00	0.00	1	2	1.00	2.01
	181659	1	1	1.00	1.00	0	1	0.00	1.00	0	3	0.00	3.01	1	5	1.00	5.02
	181660	0	0	0.00	0.00	1	2	1.00	2.01	1	3	1.00	3.01	2	5	2.01	5.02
	181661	2	2	2.01	2.01	0	1	0.00	1.00	0	0	0.00	0.00	2	3	2.01	3.01
	182016	0	0	0.00	0.00	0	2	0.00	2.01	0	2	0.00	2.01	0	4	0.00	4.01

Appendix 11 - 00. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2000. Cont'd

Brood Year	CWT Code	Campbell River (a,b) Observed CWTs M	Campbell River (a,b) Observed CWTs F	Campbell River (a,b) Adjusted CWTs M	Campbell River (a,b) Adjusted CWTs F	Quinsam River (a,b) Observed CWTs M	Quinsam River (a,b) Observed CWTs F	Quinsam River (a,b) Adjusted CWTs M	Quinsam River (a,b) Adjusted CWTs F	Quinsam Hatchery (a,b) Observed CWTs M	Quinsam Hatchery (a,b) Observed CWTs F	Quinsam Hatchery (a,b) Adjusted CWTs M	Quinsam Hatchery (a,b) Adjusted CWTs F	Total (a,b) Observed CWTs M	Total (a,b) Observed CWTs F	Total (a,b) Adjusted CWTs M	Total (a,b) Adjusted CWTs F
1995	182017	0	4	0.00	4.01	0	3	0.00	3.01	0	2	0.00	2.01	0	9	0.00	9.03
Cont'd	182018	0	0	0.00	0.00	0	2	0.00	2.01	1	5	1.00	5.02	1	7	1.00	7.02
	182019	0	0	0.00	0.00	1	0	1.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00
	182020	0	0	0.00	0.00	0	2	0.00	2.01	1	0	1.00	0.00	1	2	1.00	2.01
	182021	0	1	0.00	1.00	0	0	0.00	0.00	1	6	1.00	6.02	1	7	1.00	7.02
	182022	0	0	0.00	0.00	1	0	1.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00
	Subtotal	3	8	3.01	8.03	3	15	3.01	15.05	5	21	5.02	21.07	11	44	11.04	44.16
1994	181652	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
	Subtotal	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
Total Quinsam H CWT		6	11	6.02	11.04	69	117	69.24	117.41	242	118	242.86	118.42	317	246	318.12	246.87
Strays (d)																	
1997	183135	0	0	0.00	0.00	1	0	1.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00
1996	630127	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
	Subtotal	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00	2	0	2.00	0.00
Total CWT		6	11	6.02	11.04	70	117	70.25	117.41	243	118	243.86	118.42	319	246	320.13	246.87
No Data (500000)		0	0			0	0			0	0			0	0		
No Pin (800000)		1	0			7	13			9	4			17	17		
Lost Pin (900000)		0	0			0	0			1	1			1	1		
Observed Adipose		7	11			77	130			253	123			337	264		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

(d) CWT fish that have strayed to the system from other enhancement facilities (listed in Appendix 10). Stray tag codes from the U.S. have not been expanded.

Appendix 11 - 01. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2001.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1998	183735	0	0	0.00	0.00	0	0	0.00	0.00	5	0	5.03	0.00	5	0	5.03	0.00
	183736	0	0	0.00	0.00	4	0	4.02	0.00	5	0	5.03	0.00	9	0	9.05	0.00
	183737	0	0	0.00	0.00	5	0	5.03	0.00	7	0	7.04	0.00	12	0	12.07	0.00
	183738	0	0	0.00	0.00	2	1	2.01	1.01	4	0	4.02	0.00	6	1	6.04	1.01
	183739	0	0	0.00	0.00	1	0	1.01	0.00	12	0	12.07	0.00	13	0	13.08	0.00
	183740	0	0	0.00	0.00	8	0	8.05	0.00	9	2	9.05	2.01	17	2	17.10	2.01
	183741	0	0	0.00	0.00	2	0	2.01	0.00	9	0	9.05	0.00	11	0	11.07	0.00
	183742	0	0	0.00	0.00	3	0	3.02	0.00	7	0	7.04	0.00	10	0	10.06	0.00
	183743	0	0	0.00	0.00	7	0	7.04	0.00	13	1	13.08	1.01	20	1	20.12	1.01
	183744	0	0	0.00	0.00	3	1	3.02	1.01	14	1	14.08	1.01	17	2	17.10	2.01
	183745	0	0	0.00	0.00	2	0	2.01	0.00	9	0	9.05	0.00	11	0	11.07	0.00
	183746	0	0	0.00	0.00	6	0	6.04	0.00	12	0	12.07	0.00	18	0	18.11	0.00
	Subtotal	0	0	0.00	0.00	43	2	43.26	2.01	106	4	106.64	4.02	149	6	149.90	6.04
1997	183031	2	0	2.01	0.00	12	16	12.07	16.10	3	3	3.02	3.02	17	19	17.10	19.12
	183032	0	1	0.00	1.01	1	6	1.01	6.04	11	1	11.07	1.01	12	8	12.07	8.05
	183033	0	0	0.00	0.00	2	5	2.01	5.03	5	1	5.03	1.01	7	6	7.04	6.04
	183034	1	0	1.01	0.00	9	5	9.05	5.03	9	2	9.05	2.01	19	7	19.12	7.04
	183035	0	1	0.00	1.01	11	23	11.07	23.14	20	15	20.12	15.09	31	39	31.19	39.24
	183036	0	0	0.00	0.00	15	16	15.09	16.10	25	10	25.15	10.06	40	26	40.24	26.16
	183037	1	1	1.01	1.01	22	14	22.13	14.08	22	10	22.13	10.06	45	25	45.27	25.15
	183038	2	0	2.01	0.00	12	15	12.07	15.09	24	7	24.15	7.04	38	22	38.23	22.13
	183039	1	1	1.01	1.01	11	24	11.07	24.15	36	21	36.22	21.13	48	46	48.29	46.28
	183040	0	0	0.00	0.00	15	5	15.09	5.03	18	8	18.11	8.05	33	13	33.20	13.08
	183041	0	0	0.00	0.00	3	11	3.02	11.07	23	7	23.14	7.04	26	18	26.16	18.11
	183042	0	0	0.00	0.00	9	10	9.05	10.06	15	12	15.09	12.07	24	22	24.15	22.13
	Subtotal	7	4	7.04	4.02	122	150	122.74	150.91	211	97	212.28	97.59	340	251	342.06	252.52
1996	181830	0	0	0.00	0.00	2	15	2.01	15.09	1	3	1.01	3.02	3	18	3.02	18.11
	181831	1	1	1.01	1.01	3	7	3.02	7.04	0	1	0.00	1.01	4	9	4.02	9.05
	182509	0	1	0.00	1.01	3	9	3.02	9.05	1	1	1.01	1.01	4	11	4.02	11.07
	182510	0	1	0.00	1.01	0	3	0.00	3.02	0	1	0.00	1.01	0	5	0.00	5.03
	182511	0	2	0.00	2.01	1	1	1.01	1.01	0	0	0.00	0.00	1	3	1.01	3.02

Appendix 11 - 01. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2001. Cont'd

Brood Year	CWT Code	Campbell River (a,b) Observed CWTs M	Campbell River (a,b) Observed CWTs F	Campbell River (a,b) Adjusted CWTs M	Campbell River (a,b) Adjusted CWTs F	Quinsam River (a,b) Observed CWTs M	Quinsam River (a,b) Observed CWTs F	Quinsam River (a,b) Adjusted CWTs M	Quinsam River (a,b) Adjusted CWTs F	Quinsam Hatchery (a,b) Observed CWTs M	Quinsam Hatchery (a,b) Observed CWTs F	Quinsam Hatchery (a,b) Adjusted CWTs M	Quinsam Hatchery (a,b) Adjusted CWTs F	Total (a,b) Observed CWTs M	Total (a,b) Observed CWTs F	Total (a,b) Adjusted CWTs M	Total (a,b) Adjusted CWTs F
1996	182512	0	0	0.00	0.00	4	13	4.02	13.08	2	4	2.01	4.02	6	17	6.04	17.10
Cont'd	182513	0	0	0.00	0.00	3	16	3.02	16.10	1	11	1.01	11.07	4	27	4.02	27.16
	182514	1	1	1.01	1.01	1	14	1.01	14.08	3	10	3.02	10.06	5	25	5.03	25.15
	182515	1	0	1.01	0.00	1	11	1.01	11.07	5	10	5.03	10.06	7	21	7.04	21.13
	182516	0	1	0.00	1.01	2	14	2.01	14.08	1	6	1.01	6.04	3	21	3.02	21.13
	182517	0	0	0.00	0.00	2	10	2.01	10.06	1	10	1.01	10.06	3	20	3.02	20.12
	182518	1	0	1.01	0.00	7	9	7.04	9.05	1	6	1.01	6.04	9	15	9.05	15.09
	Subtotal	4	7	4.02	7.04	29	122	29.18	122.74	16	63	16.10	63.38	49	192	49.30	193.16
1995	182018	0	0	0.00	0.00	0	1	0.00	1.01	0	0	0.00	0.00	0	1	0.00	1.01
	182021	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.01	0	1	0.00	1.01
	Subtotal	0	0	0.00	0.00	0	1	0.00	1.01	0	1	0.00	1.01	0	2	0.00	2.01
Total Quinsam H CWT		11	11	11.07	11.07	194	275	195.17	276.66	333	165	335.02	166.00	538	451	541.26	453.73
Strays (d)																	
1997	182845	0	0	0.00	0.00	1	0	1.01	0.00	0	0	0.00	0.00	1	0	1.01	0.00
	183056	0	0	0.00	0.00	1	0	1.01	0.00	0	0	0.00	0.00	1	0	1.01	0.00
	Subtotal	0	0	0.00	0.00	2	0	2.01	0.00	0	0	0.00	0.00	2	0	2.01	0.00
Total CWT		11	11	11.07	11.07	196	275	197.19	276.66	333	165	335.02	166.00	540	451	543.27	453.73
No Data (500000)		0	0			0	0			0	0			0	0		
No Pin (800000)		1	1			29	22			18	8			48	31		
Lost Pin (900000)		0	0			1	2			1	2			2	4		
Observed Adipose		12	12			226	299			352	175			590	486		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

(d) CWT fish that have strayed to the system from other enhancement facilities (listed in Appendix 10).

Appendix 11 - 02. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2002.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1999	183247	0	0	0.00	0.00	0	0	0.00	0.00	3	0	3.02	0.00	3	0	3.02	0.00
	183248	0	0	0.00	0.00	5	0	5.03	0.00	2	0	2.01	0.00	7	0	7.04	0.00
	183249	0	0	0.00	0.00	4	0	4.02	0.00	4	0	4.02	0.00	8	0	8.04	0.00
	183250	0	0	0.00	0.00	2	1	2.01	1.01	4	0	4.02	0.00	6	1	6.03	1.01
	183251	1	0	1.01	0.00	2	0	2.01	0.00	5	0	5.03	0.00	8	0	8.04	0.00
	183252	0	0	0.00	0.00	5	0	5.03	0.00	8	0	8.04	0.00	13	0	13.07	0.00
	183253	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.03	0.00	6	0	6.03	0.00
	183254	0	0	0.00	0.00	4	0	4.02	0.00	1	0	1.01	0.00	5	0	5.03	0.00
	183255	0	0	0.00	0.00	1	0	1.01	0.00	4	0	4.02	0.00	5	0	5.03	0.00
	183256	0	0	0.00	0.00	1	0	1.01	0.00	4	0	4.02	0.00	5	0	5.03	0.00
	183257	0	0	0.00	0.00	1	0	1.01	0.00	4	0	4.02	0.00	5	0	5.03	0.00
	183258	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.01	0.00	1	0	1.01	0.00
	Subtotal	1	0	1.01	0.00	25	1	25.14	1.01	46	0	46.26	0.00	72	1	72.40	1.01
1998	183735	0	1	0.00	1.01	2	3	2.01	3.02	0	0	0.00	0.00	2	4	2.01	4.02
	183736	1	2	1.01	2.01	4	5	4.02	5.03	4	1	4.02	1.01	9	8	9.05	8.04
	183737	1	0	1.01	0.00	4	9	4.02	9.05	5	1	5.03	1.01	10	10	10.06	10.06
	183738	0	0	0.00	0.00	6	14	6.03	14.08	10	2	10.06	2.01	16	16	16.09	16.09
	183739	0	0	0.00	0.00	10	10	10.06	10.06	6	4	6.03	4.02	16	14	16.09	14.08
	183740	0	0	0.00	0.00	11	6	11.06	6.03	5	11	5.03	11.06	16	17	16.09	17.10
	183741	0	2	0.00	2.01	5	9	5.03	9.05	14	6	14.08	6.03	19	17	19.11	17.10
	183742	0	0	0.00	0.00	7	5	7.04	5.03	9	6	9.05	6.03	16	11	16.09	11.06
	183743	2	0	2.01	0.00	8	5	8.04	5.03	14	6	14.08	6.03	24	11	24.13	11.06
	183744	0	0	0.00	0.00	12	11	12.07	11.06	7	9	7.04	9.05	19	20	19.11	20.11
	183745	0	0	0.00	0.00	8	8	8.04	8.04	10	10	10.06	10.06	18	18	18.10	18.10
	183746	1	3	1.01	3.02	14	7	14.08	7.04	7	2	7.04	2.01	22	12	22.12	12.07
	Subtotal	5	8	5.03	8.04	91	92	91.51	92.52	91	58	91.51	58.33	187	158	188.05	158.89
1997	183031	0	3	0.00	3.02	1	6	1.01	6.03	0	1	0.00	1.01	1	10	1.01	10.06
	183032	0	1	0.00	1.01	1	2	1.01	2.01	0	0	0.00	0.00	1	3	1.01	3.02
	183033	0	0	0.00	0.00	1	5	1.01	5.03	0	0	0.00	0.00	1	5	1.01	5.03
	183034	0	0	0.00	0.00	0	10	0.00	10.06	0	0	0.00	0.00	0	10	0.00	10.06
	183035	1	1	1.01	1.01	0	20	0.00	20.11	2	11	2.01	11.06	3	32	3.02	32.18

Appendix 11 - 02. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2002. Cont'd

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1997	183036	0	0	0.00	0.00	4	19	4.02	19.11	1	6	1.01	6.03	5	25	5.03	25.14
Cont'd	183037	1	2	1.01	2.01	6	15	6.03	15.08	5	5	5.03	5.03	12	22	12.07	22.12
	183038	1	1	1.01	1.01	5	13	5.03	13.07	4	3	4.02	3.02	10	17	10.06	17.10
	183039	2	0	2.01	0.00	3	14	3.02	14.08	1	7	1.01	7.04	6	21	6.03	21.12
	183040	0	1	0.00	1.01	4	11	4.02	11.06	1	7	1.01	7.04	5	19	5.03	19.11
	183041	0	1	0.00	1.01	2	14	2.01	14.08	1	7	1.01	7.04	3	22	3.02	22.12
	183042	0	0	0.00	0.00	6	12	6.03	12.07	4	5	4.02	5.03	10	17	10.06	17.10
	Subtotal	5	10	5.03	10.06	33	141	33.19	141.79	19	52	19.11	52.29	57	203	57.32	204.14
1996	182512	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.01	0	1	0.00	1.01
	182514	0	0	0.00	0.00	1	0	1.01	0.00	0	0	0.00	0.00	1	0	1.01	0.00
	Subtotal	0	0	0.00	0.00	1	0	1.01	0.00	0	1	0.00	1.01	1	1	1.01	1.01
Total Quinsam H CWT		11	18	11.06	18.10	150	234	150.84	235.32	156	111	156.88	111.62	317	363	318.78	365.04
Strays (d)																	
1999	183838	0	0	0.00	0.00	1	0	1.01	0.00	0	0	0.00	0.00	1	0	1.01	0.00
	184132	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.01	0.00	1	0	1.01	0.00
1998	183821	0	0	0.00	0.00	1	0	1.01	0.00	0	0	0.00	0.00	1	0	1.01	0.00
	183826	0	1	0.00	1.01	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.01
	Subtotal	0	1	0.00	1.01	2	0	2.01	0.00	1	0	1.01	0.00	3	1	3.02	1.01
Total CWT		11	19	11.06	19.11	152	234	152.85	235.32	157	111	157.88	111.62	320	364	321.80	366.05
No Data (500000)		0	0			0	2			0	0			0	2		
No Pin (800000)		0	0			7	24			20	6			27	30		
Lost Pin (900000)		0	0			0	0			1	1			1	1		
Observed Adipose		11	19			159	260			178	118			348	397		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

(d) CWT fish that have strayed to the system from other enhancement facilities (listed in Appendix 10).

Appendix 11 - 03. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2003.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2000	184452	0	0	0.00	0.00	2	0	2.00	0.00	2	0	2.00	0.00	4	0	4.00	0.00
	184453	0	0	0.00	0.00	1	0	1.00	0.00	4	0	4.00	0.00	5	0	5.00	0.00
	184454	1	0	1.00	0.00	3	0	3.00	0.00	1	0	1.00	0.00	5	0	5.00	0.00
	184455	0	0	0.00	0.00	0	0	0.00	0.00	2	0	2.00	0.00	2	0	2.00	0.00
	184456	0	0	0.00	0.00	1	0	1.00	0.00	6	0	6.00	0.00	7	0	7.00	0.00
	184457	0	0	0.00	0.00	0	0	0.00	0.00	7	0	7.00	0.00	7	0	7.00	0.00
	184458	0	0	0.00	0.00	1	0	1.00	0.00	6	0	6.00	0.00	7	0	7.00	0.00
	184459	0	0	0.00	0.00	1	0	1.00	0.00	3	0	3.00	0.00	4	0	4.00	0.00
	184460	0	0	0.00	0.00	0	0	0.00	0.00	2	0	2.00	0.00	2	0	2.00	0.00
	184461	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
	184462	1	0	1.00	0.00	0	0	0.00	0.00	2	0	2.00	0.00	3	0	3.00	0.00
	Subtotal	2	0	2.00	0.00	9	0	9.00	0.00	36	0	36.00	0.00	47	0	47.00	0.00
1999	183247	0	0	0.00	0.00	2	5	2.00	5.00	2	1	2.00	1.00	4	6	4.00	6.00
	183248	0	0	0.00	0.00	3	4	3.00	4.00	4	4	4.00	4.00	7	8	7.00	8.00
	183249	0	1	0.00	1.00	3	3	3.00	3.00	3	4	3.00	4.00	6	8	6.00	8.00
	183250	0	0	0.00	0.00	2	5	2.00	5.00	5	0	5.00	0.00	7	5	7.00	5.00
	183251	0	0	0.00	0.00	2	4	2.00	4.00	10	9	10.00	9.00	12	13	12.00	13.00
	183252	0	0	0.00	0.00	2	4	2.00	4.00	4	5	4.00	5.00	6	9	6.00	9.00
	183253	0	0	0.00	0.00	1	1	1.00	1.00	8	3	8.00	3.00	9	4	9.00	4.00
	183254	1	0	1.00	0.00	4	1	4.00	1.00	6	3	6.00	3.00	11	4	11.00	4.00
	183255	0	0	0.00	0.00	2	1	2.00	1.00	8	3	8.00	3.00	10	4	10.00	4.00
	183256	0	0	0.00	0.00	1	1	1.00	1.00	13	3	13.00	3.00	14	4	14.00	4.00
	183257	0	0	0.00	0.00	3	2	3.00	2.00	8	1	8.00	1.00	11	3	11.00	3.00
	183258	0	0	0.00	0.00	1	0	1.00	0.00	5	0	5.00	0.00	6	0	6.00	0.00
	Subtotal	1	1	1.00	1.00	26	31	26.00	31.00	76	36	76.00	36.00	103	68	103.00	68.00
1998	183735	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
	183736	1	0	1.00	0.00	0	3	0.00	3.00	0	0	0.00	0.00	1	3	1.00	3.00
	183737	1	1	1.00	1.00	0	1	0.00	1.00	1	0	1.00	0.00	2	2	2.00	2.00
	183738	0	0	0.00	0.00	2	3	2.00	3.00	1	1	1.00	1.00	3	4	3.00	4.00
	183739	0	0	0.00	0.00	1	1	1.00	1.00	1	2	1.00	2.00	2	3	2.00	3.00
	183740	1	1	1.00	1.00	0	1	0.00	1.00	1	2	1.00	2.00	2	4	2.00	4.00

Appendix 11 - 03. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2003. Cont'd

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1998	183741	0	0	0.00	0.00	1	4	1.00	4.00	2	4	2.00	4.00	3	8	3.00	8.00
Cont'd	183742	0	0	0.00	0.00	2	4	2.00	4.00	1	1	1.00	1.00	3	5	3.00	5.00
	183743	0	1	0.00	1.00	3	4	3.00	4.00	0	3	0.00	3.00	3	8	3.00	8.00
	183744	0	0	0.00	0.00	3	2	3.00	2.00	1	4	1.00	4.00	4	6	4.00	6.00
	183745	0	0	0.00	0.00	1	2	1.00	2.00	2	9	2.00	9.00	3	11	3.00	11.00
	183746	0	0	0.00	0.00	0	3	0.00	3.00	1	4	1.00	4.00	1	7	1.00	7.00
	Subtotal	3	3	3.00	3.00	13	28	13.00	28.00	11	31	11.00	31.00	27	62	27.00	62.00
1997	183039	0	0	0.00	0.00	0	2	0.00	2.00	0	0	0.00	0.00	0	2	0.00	2.00
	183040	0	0	0.00	0.00	1	0	1.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00
	Subtotal	0	0	0.00	0.00	1	2	1.00	2.00	0	0	0.00	0.00	1	2	1.00	2.00
Total Quinsam H CWT		6	4	6.00	4.00	49	61	49.00	61.00	123	67	123.00	67.00	178	132	178.00	132.00
Total CWT		6	4	6.00	4.00	49	61	49.00	61.00	123	67	123.00	67.00	178	132	178.00	132.00
No Data (500000)		0	0			0	0			0	0			0	0		
No Pin (800000)		0	0			1	8			4	5			5	13		
Lost Pin (900000)		0	0			0	0			0	0			0	0		
Observed Adipose		6	4			50	69			127	72			183	145		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 11 - 04. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2004.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2001	184732	0	0	0.00	0.00	2	0	2.00	0.00	9	0	9.02	0.00	11	0	11.02	0.00
	184733	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.01	0.00	6	0	6.01	0.00
	184734	0	0	0.00	0.00	3	1	3.01	1.00	6	1	6.01	1.00	9	2	9.02	2.00
	184735	1	0	1.00	0.00	2	0	2.00	0.00	5	0	5.01	0.00	8	0	8.02	0.00
	184736	1	0	1.00	0.00	1	0	1.00	0.00	9	0	9.02	0.00	11	0	11.02	0.00
	184737	0	0	0.00	0.00	3	0	3.01	0.00	11	0	11.02	0.00	14	0	14.03	0.00
	184738	0	0	0.00	0.00	1	0	1.00	0.00	9	0	9.02	0.00	10	0	10.02	0.00
	184739	0	0	0.00	0.00	2	0	2.00	0.00	9	0	9.02	0.00	11	0	11.02	0.00
	184740	0	0	0.00	0.00	0	0	0.00	0.00	5	0	5.01	0.00	5	0	5.01	0.00
	184741	0	0	0.00	0.00	1	0	1.00	0.00	6	0	6.01	0.00	7	0	7.02	0.00
	184742	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.01	0.00	6	0	6.01	0.00
	184743	0	0	0.00	0.00	0	0	0.00	0.00	3	0	3.01	0.00	3	0	3.01	0.00
	Subtotal	2	0	2.00	0.00	15	1	15.03	1.00	84	1	84.18	1.00	101	2	101.22	2.00
2000	184452	2	0	2.00	0.00	3	2	3.01	2.00	8	7	8.02	7.02	13	9	13.03	9.02
	184453	0	0	0.00	0.00	8	6	8.02	6.01	7	5	7.02	5.01	15	11	15.03	11.02
	184454	0	0	0.00	0.00	1	2	1.00	2.00	1	2	1.00	2.00	2	4	2.00	4.01
	184455	1	1	1.00	1.00	3	6	3.01	6.01	1	0	1.00	0.00	5	7	5.01	7.02
	184456	1	0	1.00	0.00	2	3	2.00	3.01	10	6	10.02	6.01	13	9	13.03	9.02
	184457	0	0	0.00	0.00	2	3	2.00	3.01	13	7	13.03	7.02	15	10	15.03	10.02
	184458	0	0	0.00	0.00	4	4	4.01	4.01	8	8	8.02	8.02	12	12	12.03	12.03
	184459	1	0	1.00	0.00	2	2	2.00	2.00	7	3	7.02	3.01	10	5	10.02	5.01
	184460	0	0	0.00	0.00	4	2	4.01	2.00	8	6	8.02	6.01	12	8	12.03	8.02
	184461	0	0	0.00	0.00	5	4	5.01	4.01	10	5	10.02	5.01	15	9	15.03	9.02
	184462	1	2	1.00	2.00	0	2	0.00	2.00	11	5	11.02	5.01	12	9	12.03	9.02
	184463	0	0	0.00	0.00	0	0	0.00	0.00	5	0	5.01	0.00	5	0	5.01	0.00
	Subtotal	6	3	6.01	3.01	34	36	34.07	36.08	89	54	89.19	54.12	129	93	129.28	93.20
1999	183247	1	1	1.00	1.00	2	3	2.00	3.01	0	2	0.00	2.00	3	6	3.01	6.01
	183248	0	1	0.00	1.00	0	5	0.00	5.01	0	1	0.00	1.00	0	7	0.00	7.02
	183249	0	2	0.00	2.00	0	1	0.00	1.00	3	1	3.01	1.00	3	4	3.01	4.01
	183250	0	3	0.00	3.01	0	2	0.00	2.00	1	1	1.00	1.00	1	6	1.00	6.01
	183251	0	0	0.00	0.00	2	0	2.00	0.00	2	5	2.00	5.01	4	5	4.01	5.01

Appendix 11 - 04. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2004. Cont'd

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1999	183252	0	0	0.00	0.00	1	6	1.00	6.01	3	9	3.01	9.02	4	15	4.01	15.03
Cont'd	183253	0	0	0.00	0.00	0	7	0.00	7.02	3	3	3.01	3.01	3	10	3.01	10.02
	183254	1	0	1.00	0.00	1	0	1.00	0.00	2	1	2.00	1.00	4	1	4.01	1.00
	183255	0	0	0.00	0.00	1	2	1.00	2.00	0	5	0.00	5.01	1	7	1.00	7.02
	183256	0	1	0.00	1.00	1	5	1.00	5.01	1	4	1.00	4.01	2	10	2.00	10.02
	183257	0	0	0.00	0.00	1	2	1.00	2.00	7	7	7.02	7.02	8	9	8.02	9.02
	183258	1	0	1.00	0.00	3	3	3.01	3.01	3	5	3.01	5.01	7	8	7.02	8.02
	Subtotal	3	8	3.01	8.02	12	36	12.03	36.08	25	44	25.05	44.10	40	88	40.09	88.19
1998	183739	0	0	0.00	0.00	0	1	0.00	1.00	0	0	0.00	0.00	0	1	0.00	1.00
	Subtotal	0	0	0.00	0.00	0	1	0.00	1.00	0	0	0.00	0.00	0	1	0.00	1.00
Total Quinsam H CWT		11	11	11.02	11.02	61	74	61.13	74.16	198	99	198.43	99.21	270	184	270.59	184.40
Strays (d)																	
2001	184628	0	0	0.00	0.00	1	0	1.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00
	184641	0	0	0.00	0.00	0	1	0.00	1.00	0	0	0.00	0.00	0	1	0.00	1.00
	631375	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
	631405	0	0	0.00	0.00	1	0	1.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00
	636322	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
2000	093256	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
	184556	0	0	0.00	0.00	0	1	0.00	1.00	0	0	0.00	0.00	0	1	0.00	1.00
	Subtotal	0	0	0.00	0.00	2	2	2.00	2.00	3	0	3.00	0.00	5	2	5.00	2.00
Total CWT		11	11	11.02	11.02	63	76	63.13	76.16	201	99	201.43	99.21	275	186	275.59	186.40
No Data (500000)		0	0			0	0			0	0			0	0		
No Pin (800000)		2	0			1	4			12	2			15	6		
Lost Pin (900000)		0	0			0	0			1	0			1	0		
Observed Adipose		13	11			64	80			214	101			291	192		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

(d) CWT fish that have strayed to the system from other enhancement facilities (listed in Appendix 10). Stray tag codes from the U.S. have not been expanded.

Appendix 11 - 05. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2005.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2002	185115	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.00	0.00	6	0	6.00	0.00
	185116	0	0	0.00	0.00	2	0	2.00	0.00	4	0	4.00	0.00	6	0	6.00	0.00
	185117	0	0	0.00	0.00	0	0	0.00	0.00	7	0	7.00	0.00	7	0	7.00	0.00
	185118	0	0	0.00	0.00	0	0	0.00	0.00	3	0	3.00	0.00	3	0	3.00	0.00
	185119	0	0	0.00	0.00	0	0	0.00	0.00	3	0	3.00	0.00	3	0	3.00	0.00
	185120	0	0	0.00	0.00	0	1	0.00	1.00	8	1	8.00	1.00	8	2	8.00	2.00
	185121	0	0	0.00	0.00	0	0	0.00	0.00	5	0	5.00	0.00	5	0	5.00	0.00
	185122	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.00	0.00	6	0	6.00	0.00
	185123	0	0	0.00	0.00	0	0	0.00	0.00	5	1	5.00	1.00	5	1	5.00	1.00
	185124	0	0	0.00	0.00	0	0	0.00	0.00	14	0	14.00	0.00	14	0	14.00	0.00
	185125	0	0	0.00	0.00	0	0	0.00	0.00	13	0	13.00	0.00	13	0	13.00	0.00
	185126	0	0	0.00	0.00	1	0	1.00	0.00	2	0	2.00	0.00	3	0	3.00	0.00
	Subtotal	0	0	0.00	0.00	3	1	3.00	1.00	76	2	76.00	2.00	79	3	79.00	3.00
2001	184732	0	0	0.00	0.00	5	5	5.00	5.00	8	4	8.00	4.00	13	9	13.00	9.00
	184733	0	1	0.00	1.00	1	3	1.00	3.00	7	5	7.00	5.00	8	9	8.00	9.00
	184734	1	0	1.00	0.00	2	5	2.00	5.00	4	1	4.00	1.00	7	6	7.00	6.00
	184735	1	0	1.00	0.00	2	2	2.00	2.00	10	2	10.00	2.00	13	4	13.00	4.00
	184736	0	0	0.00	0.00	4	2	4.00	2.00	10	6	10.00	6.00	14	8	14.00	8.00
	184737	0	0	0.00	0.00	8	5	8.00	5.00	14	10	14.00	10.00	22	15	22.00	15.00
	184738	0	0	0.00	0.00	8	3	8.00	3.00	16	9	16.00	9.00	24	12	24.00	12.00
	184739	0	0	0.00	0.00	3	5	3.00	5.00	10	5	10.00	5.00	13	10	13.00	10.00
	184740	0	0	0.00	0.00	2	0	2.00	0.00	15	11	15.00	11.00	17	11	17.00	11.00
	184741	0	0	0.00	0.00	4	0	4.00	0.00	8	13	8.00	13.00	12	13	12.00	13.00
	184742	0	0	0.00	0.00	0	2	0.00	2.00	17	11	17.00	11.00	17	13	17.00	13.00
	184743	0	0	0.00	0.00	1	0	1.00	0.00	11	2	11.00	2.00	12	2	12.00	2.00
	Subtotal	2	1	2.00	1.00	40	32	40.00	32.00	130	79	130.00	79.00	172	112	172.00	112.00
2000	184452	0	0	0.00	0.00	0	1	0.00	1.00	1	1	1.00	1.00	1	2	1.00	2.00
	184453	0	0	0.00	0.00	0	1	0.00	1.00	0	0	0.00	0.00	0	1	0.00	1.00
	184455	0	0	0.00	0.00	1	2	1.00	2.00	0	0	0.00	0.00	1	2	1.00	2.00
	184456	0	0	0.00	0.00	0	3	0.00	3.00	2	4	2.00	4.00	2	7	2.00	7.00
	184457	0	0	0.00	0.00	0	1	0.00	1.00	0	5	0.00	5.00	0	6	0.00	6.00

Appendix 11 - 05. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2005. Cont'd

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2000	184458	0	0	0.00	0.00	1	2	1.00	2.00	1	2	1.00	2.00	2	4	2.00	4.00
Cont'd	184459	0	0	0.00	0.00	1	1	1.00	1.00	2	3	2.00	3.00	3	4	3.00	4.00
	184460	0	2	0.00	2.00	0	3	0.00	3.00	0	3	0.00	3.00	0	8	0.00	8.00
	184461	0	0	0.00	0.00	2	1	2.00	1.00	1	3	1.00	3.00	3	4	3.00	4.00
	184462	0	0	0.00	0.00	1	1	1.00	1.00	2	3	2.00	3.00	3	4	3.00	4.00
	184463	0	0	0.00	0.00	0	5	0.00	5.00	0	4	0.00	4.00	0	9	0.00	9.00
	Subtotal	0	2	0.00	2.00	6	21	6.00	21.00	9	28	9.00	28.00	15	51	15.00	51.00
1999	183248	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00	2	0	2.00	0.00
	183254	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
	183258	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
	Subtotal	0	0	0.00	0.00	1	0	1.00	0.00	1	2	1.00	2.00	2	2	2.00	2.00
Total Quinsam H CWT		2	3	2.00	3.00	50	54	50.00	54.00	216	111	216.00	111.00	268	168	268.00	168.00
Strays (d)																	
2001	184762	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.00	0	1	0.00	1.00
2000	184843	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
	Subtotal	0	0	0.00	0.00	0	0	0.00	0.00	1	1	1.00	1.00	1	1	1.00	1.00
Total CWT		2	3	2.00	3.00	50	54	50.00	54.00	217	112	217.00	112.00	269	169	269.00	169.00
No Data (500000)		0	0			0	0			0	0			0	0		
No Pin (800000)		0	1			1	3			29	3			30	7		
Lost Pin (900000)		0	0			0	0			0	0			0	0		
Observed Adipose		2	4			51	57			246	115			299	176		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

(d) CWT fish that have strayed to the system from other enhancement facilities (listed in Appendix 10).

Appendix 11 - 06. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2006.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2003	182548	0	0	0.00	0.00	0	0	0.00	0.00	12	0	12.05	0.00	12	0	12.05	0.00
	182549	0	0	0.00	0.00	0	2	0.00	2.01	12	1	12.05	1.00	12	3	12.05	3.01
	184809	0	0	0.00	0.00	2	0	2.01	0.00	4	1	4.02	1.00	6	1	6.02	1.00
	184810	0	0	0.00	0.00	1	0	1.00	0.00	8	2	8.03	2.01	9	2	9.04	2.01
	184811	1	0	1.00	0.00	0	2	0.00	2.01	9	0	9.04	0.00	10	2	10.04	2.01
	184812	1	0	1.00	0.00	2	0	2.01	0.00	9	0	9.04	0.00	12	0	12.05	0.00
	184813	1	0	1.00	0.00	0	0	0.00	0.00	15	1	15.06	1.00	16	1	16.07	1.00
	185003	1	0	1.00	0.00	0	0	0.00	0.00	6	0	6.02	0.00	7	0	7.03	0.00
	185004	1	0	1.00	0.00	0	0	0.00	0.00	2	0	2.01	0.00	3	0	3.01	0.00
	185005	0	0	0.00	0.00	2	0	2.01	0.00	5	0	5.02	0.00	7	0	7.03	0.00
	185006	0	0	0.00	0.00	0	0	0.00	0.00	10	1	10.04	1.00	10	1	10.04	1.00
	185417	0	0	0.00	0.00	0	0	0.00	0.00	2	0	2.01	0.00	2	0	2.01	0.00
	Subtotal	5	0	5.02	0.00	7	4	7.03	4.02	94	6	94.39	6.02	106	10	106.43	10.04
2002	185115	1	0	1.00	0.00	3	1	3.01	1.00	5	1	5.02	1.00	9	2	9.04	2.01
	185116	0	0	0.00	0.00	2	0	2.01	0.00	1	1	1.00	1.00	3	1	3.01	1.00
	185117	1	1	1.00	1.00	4	7	4.02	7.03	3	5	3.01	5.02	8	13	8.03	13.05
	185118	0	0	0.00	0.00	0	2	0.00	2.01	0	1	0.00	1.00	0	3	0.00	3.01
	185119	0	1	0.00	1.00	0	5	0.00	5.02	5	8	5.02	8.03	5	14	5.02	14.06
	185120	1	0	1.00	0.00	2	9	2.01	9.04	9	10	9.04	10.04	12	19	12.05	19.08
	185121	0	2	0.00	2.01	1	1	1.00	1.00	10	9	10.04	9.04	11	12	11.05	12.05
	185122	2	1	2.01	1.00	1	7	1.00	7.03	6	6	6.02	6.02	9	14	9.04	14.06
	185123	1	0	1.00	0.00	0	5	0.00	5.02	11	3	11.05	3.01	12	8	12.05	8.03
	185124	0	2	0.00	2.01	0	2	0.00	2.01	6	8	6.02	8.03	6	12	6.02	12.05
	185125	0	0	0.00	0.00	5	6	5.02	6.02	11	9	11.05	9.04	16	15	16.07	15.06
	185126	0	0	0.00	0.00	3	3	3.01	3.01	12	6	12.05	6.02	15	9	15.06	9.04
	Subtotal	6	7	6.02	7.03	21	48	21.09	48.20	79	67	79.32	67.27	106	122	106.43	122.50
2001	184732	0	0	0.00	0.00	1	2	1.00	2.01	1	1	1.00	1.00	2	3	2.01	3.01
	184733	1	0	1.00	0.00	1	5	1.00	5.02	0	1	0.00	1.00	2	6	2.01	6.02
	184734	0	0	0.00	0.00	0	0	0.00	0.00	0	2	0.00	2.01	0	2	0.00	2.01
	184735	0	1	0.00	1.00	1	1	1.00	1.00	0	1	0.00	1.00	1	3	1.00	3.01
	184736	0	0	0.00	0.00	4	7	4.02	7.03	2	4	2.01	4.02	6	11	6.02	11.05

Appendix 11 - 06. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2006. Cont'd

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2001	184737	0	0	0.00	0.00	0	1	0.00	1.00	3	5	3.01	5.02	3	6	3.01	6.02
Cont'd	184738	0	0	0.00	0.00	1	4	1.00	4.02	3	6	3.01	6.02	4	10	4.02	10.04
	184739	0	1	0.00	1.00	2	5	2.01	5.02	2	6	2.01	6.02	4	12	4.02	12.05
	184740	0	0	0.00	0.00	1	6	1.00	6.02	2	6	2.01	6.02	3	12	3.01	12.05
	184741	0	0	0.00	0.00	1	7	1.00	7.03	4	5	4.02	5.02	5	12	5.02	12.05
	184742	0	0	0.00	0.00	3	9	3.01	9.04	1	4	1.00	4.02	4	13	4.02	13.05
	184743	0	0	0.00	0.00	0	2	0.00	2.01	10	7	10.04	7.03	10	9	10.04	9.04
	Subtotal	1	2	1.00	2.01	15	49	15.06	49.20	28	48	28.11	48.20	44	99	44.18	99.41
Total Quinsam H CWT		12	9	12.05	9.04	43	101	43.18	101.41	201	121	201.82	121.50	256	231	257.05	231.95
Strays (d)																	
2002	185150	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
	Subtotal	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.00	0.00	1	0	1.00	0.00
Total CWT		12	9	12.05	9.04	43	101	43.18	101.41	202	121	202.83	121.50	257	231	258.05	231.95
No Data (500000)		0	0			0	0			0	0			0	0		
No Pin (800000)		3	1			5	11			9	4			17	16		
Lost Pin (900000)		0	0			0	1			1	0			1	1		
Observed Adipose		15	10			48	113			212	125			275	248		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

(d) CWT fish that have strayed to the system from other enhancement facilities (listed in Appendix 10).

Appendix 11 - 07. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2007.

Brood Year	CWT Code	Campbell River (a,b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs		Observed CWTs		Adjusted CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2004	182550	0	0	0.00	0.00	0	0	0.00	0.00	3	0	3.05	0.00	3	0	3.05	0.00
	182818	0	0	0.00	0.00	0	0	0.00	0.00	3	0	3.05	0.00	3	0	3.05	0.00
	182819	0	0	0.00	0.00	0	0	0.00	0.00	7	0	7.13	0.00	7	0	7.13	0.00
	182820	0	0	0.00	0.00	0	0	0.00	0.00	2	0	2.04	0.00	2	0	2.04	0.00
	183605	0	0	0.00	0.00	0	0	0.00	0.00	2	0	2.04	0.00	2	0	2.04	0.00
	184814	0	0	0.00	0.00	1	0	1.02	0.00	8	1	8.15	1.02	9	1	9.16	1.02
	184815	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.11	0.00	6	0	6.11	0.00
	184816	0	0	0.00	0.00	0	0	0.00	0.00	2	1	2.04	1.02	2	1	2.04	1.02
	184817	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.02	0.00	1	0	1.02	0.00
	184818	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.11	0.00	6	0	6.11	0.00
	185020	0	0	0.00	0.00	0	0	0.00	0.00	6	0	6.11	0.00	6	0	6.11	0.00
	185025	0	0	0.00	0.00	0	0	0.00	0.00	8	0	8.15	0.00	8	0	8.15	0.00
	Subtotal	0	0	0.00	0.00	1	0	1.02	0.00	54	2	54.98	2.04	55	2	56.00	2.04
2003	182548	0	0	0.00	0.00	1	0	1.02	0.00	17	11	17.31	11.20	18	11	18.33	11.20
	182549	0	1	0.00	1.02	1	1	1.02	1.02	16	15	16.29	15.27	17	17	17.31	17.31
	184809	0	0	0.00	0.00	2	1	2.04	1.02	9	7	9.16	7.13	11	8	11.20	8.15
	184810	0	0	0.00	0.00	2	2	2.04	2.04	13	8	13.24	8.15	15	10	15.27	10.18
	184811	0	0	0.00	0.00	0	2	0.00	2.04	10	12	10.18	12.22	10	14	10.18	14.25
	184812	0	0	0.00	0.00	1	0	1.02	0.00	17	8	17.31	8.15	18	8	18.33	8.15
	184813	0	0	0.00	0.00	0	1	0.00	1.02	15	9	15.27	9.16	15	10	15.27	10.18
	185003	1	0	1.02	0.00	1	2	1.02	2.04	9	7	9.16	7.13	11	9	11.20	9.16
	185004	1	0	1.02	0.00	2	2	2.04	2.04	8	3	8.15	3.05	11	5	11.20	5.09
	185005	3	0	3.05	0.00	2	2	2.04	2.04	6	5	6.11	5.09	11	7	11.20	7.13
	185006	0	0	0.00	0.00	2	2	2.04	2.04	6	4	6.11	4.07	8	6	8.15	6.11
	185417	0	0	0.00	0.00	0	1	0.00	1.02	6	7	6.11	7.13	6	8	6.11	8.15
	Subtotal	5	1	5.09	1.02	14	16	14.25	16.29	132	96	134.39	97.74	151	113	153.74	115.05
2002	185115	0	0	0.00	0.00	0	1	0.00	1.02	0	0	0.00	0.00	0	1	0.00	1.02
	185116	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.02	0.00	1	0	1.02	0.00
	185119	0	0	0.00	0.00	1	2	1.02	2.04	0	5	0.00	5.09	1	7	1.02	7.13
	185120	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.02	0	1	0.00	1.02
	185121	0	0	0.00	0.00	0	0	0.00	0.00	0	2	0.00	2.04	0	2	0.00	2.04

Appendix 11 - 07. Estimates of the adjusted number of CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2007. Cont'd

Brood Year	CWT Code	Campbell River (a,b) Observed CWTs M	Campbell River (a,b) Observed CWTs F	Campbell River (a,b) Adjusted CWTs M	Campbell River (a,b) Adjusted CWTs F	Quinsam River (a,b) Observed CWTs M	Quinsam River (a,b) Observed CWTs F	Quinsam River (a,b) Adjusted CWTs M	Quinsam River (a,b) Adjusted CWTs F	Quinsam Hatchery (a,b) Observed CWTs M	Quinsam Hatchery (a,b) Observed CWTs F	Quinsam Hatchery (a,b) Adjusted CWTs M	Quinsam Hatchery (a,b) Adjusted CWTs F	Total (a,b) Observed CWTs M	Total (a,b) Observed CWTs F	Total (a,b) Adjusted CWTs M	Total (a,b) Adjusted CWTs F
2002	185122	0	0	0.00	0.00	0	0	0.00	0.00	1	5	1.02	5.09	1	5	1.02	5.09
Cont'd	185123	0	0	0.00	0.00	0	1	0.00	1.02	0	1	0.00	1.02	0	2	0.00	2.04
	185124	0	1	0.00	1.02	0	4	0.00	4.07	1	2	1.02	2.04	1	7	1.02	7.13
	185125	0	0	0.00	0.00	0	1	0.00	1.02	1	2	1.02	2.04	1	3	1.02	3.05
	185126	0	0	0.00	0.00	0	0	0.00	0.00	1	1	1.02	1.02	1	1	1.02	1.02
	Subtotal	0	1	0.00	1.02	1	9	1.02	9.16	5	19	5.09	19.34	6	29	6.11	29.53
2001	184736	0	0	0.00	0.00	0	1	0.00	1.02	0	0	0.00	0.00	0	1	0.00	1.02
	184737	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.02	0	1	0.00	1.02
	184738	0	0	0.00	0.00	0	1	0.00	1.02	0	0	0.00	0.00	0	1	0.00	1.02
	184741	0	0	0.00	0.00	0	0	0.00	0.00	0	1	0.00	1.02	0	1	0.00	1.02
	184742	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.02	0.00	1	0	1.02	0.00
	Subtotal	0	0	0.00	0.00	0	2	0.00	2.04	1	2	1.02	2.04	1	4	1.02	4.07
Total Quinsam H CWT		5	2	5.09	2.04	16	27	16.29	27.49	192	119	195.48	121.16	213	148	216.86	150.68
Strays (d)																	
2004	183718	1	0	1.02	0.00	0	0	0.00	0.00	0	0	0.00	0.00	1	0	1.02	0.00
2003	185731	0	2	0.00	2.04	0	0	0.00	0.00	0	0	0.00	0.00	0	2	0.00	2.04
2002	185336	0	0	0.00	0.00	0	1	0.00	1.02	0	0	0.00	0.00	0	1	0.00	1.02
	Subtotal	1	2	1.02	2.04	0	1	0.00	1.02	0	0	0.00	0.00	1	3	1.02	3.05
Total CWT		6	4	6.11	4.07	16	28	16.29	28.51	192	119	195.48	121.16	214	151	217.88	153.74
No Data (500000)		0	0			3	3			0	0			3	3		
No Pin (800000)		0	0			0	6			12	7			12	13		
Lost Pin (900000)		0	0			0	0			1	0			1	0		
Observed Adipose		6	4			19	37			205	126			230	167		

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

(d) CWT fish that have strayed to the system from other enhancement facilities (listed in Appendix 10).

Appendix 12 - 99. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 1999.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1996	181830	0.00	0.00	0.00	0.00	1.00	0.00	1.76	0.00	15.03	1.00	15.03	1.00	16.03	1.00	16.78	1.00
	181831	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
	182509	0.00	0.00	0.00	0.00	3.01	0.00	5.27	0.00	11.02	0.00	11.02	0.00	14.02	0.00	16.29	0.00
	182510	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.02	0.00	13.02	0.00	13.02	0.00	13.02	0.00
	182511	0.00	0.00	0.00	0.00	1.00	0.00	1.76	0.00	5.01	0.00	5.01	0.00	6.01	0.00	6.77	0.00
	182512	0.00	0.00	0.00	0.00	2.00	0.00	3.52	0.00	18.03	0.00	18.03	0.00	20.04	0.00	21.55	0.00
	182513	0.00	0.00	0.00	0.00	1.00	0.00	1.76	0.00	25.04	0.00	25.04	0.00	26.05	0.00	26.80	0.00
	182514	0.00	0.00	0.00	0.00	2.00	0.00	3.52	0.00	38.07	1.00	38.07	1.00	40.07	1.00	41.58	1.00
	182515	0.00	0.00	0.00	0.00	1.00	0.00	1.76	0.00	18.03	0.00	18.03	0.00	19.03	0.00	19.79	0.00
	182516	0.00	0.00	0.00	0.00	1.00	0.00	1.76	0.00	17.03	1.00	17.03	1.00	18.03	1.00	18.79	1.00
	182517	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.02	0.00	13.02	0.00	13.02	0.00	13.02	0.00
	182518	0.00	0.00	0.00	0.00	1.00	0.00	1.76	0.00	16.03	0.00	16.03	0.00	17.03	0.00	17.79	0.00
	Subtotal	0.00	0.00	0.00	0.00	13.02	0.00	22.85	0.00	190.33	3.01	190.33	3.01	203.36	3.01	213.18	3.01
1995	181658	0.00	1.00	0.00	1.80	0.00	0.00	0.00	0.00	8.01	9.02	8.01	9.02	8.01	10.02	8.01	10.82
	181659	0.00	2.00	0.00	3.61	2.00	1.00	3.52	1.76	12.02	5.01	12.02	5.01	14.02	8.01	15.54	10.37
	181660	0.00	0.00	0.00	0.00	1.00	3.01	1.76	5.27	12.02	12.02	12.02	12.02	13.02	15.03	13.78	17.29
	181661	1.00	1.00	2.75	1.80	2.00	2.00	3.52	3.51	7.01	1.00	7.01	1.00	10.02	4.01	13.28	6.32
	182016	0.00	0.00	0.00	0.00	1.00	1.00	1.76	1.76	22.04	12.02	22.04	12.02	23.04	13.02	23.80	13.78
	182017	1.00	3.01	2.75	5.41	0.00	4.01	0.00	7.03	8.01	11.02	8.01	11.02	9.02	18.03	10.77	23.46
	182018	0.00	0.00	0.00	0.00	1.00	2.00	1.76	3.51	8.01	19.03	8.01	19.03	9.02	21.04	9.77	22.55
	182019	1.00	1.00	2.75	1.80	1.00	2.00	1.76	3.51	3.01	1.00	3.01	1.00	5.01	4.01	7.51	6.32
	182020	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.76	18.03	10.02	18.03	10.02	18.03	11.02	18.03	11.77
	182021	0.00	0.00	0.00	0.00	1.00	5.01	1.76	8.79	13.02	27.05	13.02	27.05	14.02	32.06	14.78	35.83
	182022	1.00	1.00	2.75	1.80	1.00	0.00	1.76	0.00	4.01	4.01	4.01	4.01	6.01	5.01	8.52	5.81
	Subtotal	4.01	9.02	11.00	16.24	10.02	21.04	17.58	36.90	115.20	111.20	115.20	111.20	129.23	141.25	143.78	164.33
1994	020960	0.00	1.00	0.00	1.80	0.00	3.01	0.00	5.27	0.00	1.00	0.00	1.00	0.00	5.01	0.00	8.08
	020963	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
	181644	0.00	2.00	0.00	3.61	0.00	2.00	0.00	3.51	2.00	4.01	2.00	4.01	2.00	8.01	2.00	11.13
	181645	0.00	0.00	0.00	0.00	0.00	2.00	0.00	3.51	1.00	3.01	1.00	3.01	1.00	5.01	1.00	6.52
	181646	0.00	0.00	0.00	0.00	1.00	1.00	1.76	1.76	3.01	6.01	3.01	6.01	4.01	7.01	4.76	7.77
	181647	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.76	2.00	6.01	2.00	6.01	2.00	7.01	2.00	7.77

Appendix 12 - 99. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 1999. Cont'd

Brood Year	CWT Code	Campbell River (a, b) Adjusted CWTs M	Campbell River (a, b) Adjusted CWTs F	Campbell River (a, b) Estimated CWTs M	Campbell River (a, b) Estimated CWTs F	Quinsam River (a,b) Adjusted CWTs M	Quinsam River (a,b) Adjusted CWTs F	Quinsam River (a,b) Estimated CWTs M	Quinsam River (a,b) Estimated CWTs F	Quinsam Hatchery (a,b) Adjusted CWTs M	Quinsam Hatchery (a,b) Adjusted CWTs F	Quinsam Hatchery (a,b) Estimated CWTs M	Quinsam Hatchery (a,b) Estimated CWTs F	Total (a,b) Adjusted CWTs M	Total (a,b) Adjusted CWTs F	Total (a,b) Estimated CWTs M	Total (a,b) Estimated CWTs F
1994	181648	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.01	7.01	3.01	7.01	3.01	7.01	3.01	7.01
Cont'd	181649	0.00	0.00	0.00	0.00	0.00	2.00	0.00	3.51	3.01	6.01	3.01	6.01	3.01	8.01	3.01	9.52
	181650	1.00	0.00	2.75	0.00	0.00	0.00	0.00	0.00	1.00	9.02	1.00	9.02	2.00	9.02	3.75	9.02
	181651	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.76	1.00	6.01	1.00	6.01	1.00	7.01	1.00	7.77
	181652	0.00	1.00	0.00	1.80	0.00	0.00	0.00	0.00	2.00	6.01	2.00	6.01	2.00	7.01	2.00	7.81
	Subtotal	1.00	4.01	2.75	7.22	1.00	12.02	1.76	21.09	18.03	55.10	18.03	55.10	20.04	71.12	22.54	83.40
1993	180629	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
	Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Total Quinsam H CWT		5.01	13.02	13.76	23.46	24.04	33.06	42.18	57.99	323.57	170.30	323.57	170.30	352.62	216.38	379.50	251.74
Strays																	
1996	182535	0.00	1.00	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.80
	Subtotal	0.00	1.00	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.80
Total CWT		5.01	14.02	13.76	25.26	24.04	33.06	42.18	57.99	323.57	170.30	323.57	170.30	352.62	217.38	379.50	253.55
Petersen Est. (c)		552	652			993	963										
Sample Size (d)		201	362			566	549										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 12 - 00. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2000.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1997	183031	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.04	0.00	10.04	0.00	10.04	0.00	10.04	0.00
	183032	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	6.02	0.00	6.02	0.00	7.02	0.00	7.34	0.00
	183033	0.00	0.00	0.00	0.00	3.01	1.00	3.95	1.23	1.00	0.00	1.00	0.00	4.01	1.00	4.95	1.23
	183034	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	8.03	0.00	8.03	0.00	9.03	0.00	9.34	0.00
	183035	0.00	0.00	0.00	0.00	4.01	0.00	5.27	0.00	27.10	0.00	27.10	0.00	31.11	0.00	32.36	0.00
	183036	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.04	0.00	11.04	0.00	11.04	0.00	11.04	0.00
	183037	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	15.05	0.00	15.05	0.00	16.06	0.00	16.37	0.00
	183038	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	7.02	0.00	7.02	0.00	8.03	0.00	8.34	0.00
	183039	0.00	0.00	0.00	0.00	6.02	0.00	7.90	0.00	21.07	0.00	21.07	0.00	27.10	0.00	28.97	0.00
	183040	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.02	0.00	7.02	0.00	7.02	0.00	7.02	0.00
	183041	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	8.03	0.00	8.03	0.00	9.03	0.00	9.34	0.00
	183042	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.02	0.00	6.02	0.00	6.02	0.00	6.02	0.00
	Subtotal	0.00	0.00	0.00	0.00	18.06	1.00	23.70	1.23	127.45	0.00	127.45	0.00	145.51	1.00	151.15	1.23
1996	181830	0.00	0.00	0.00	0.00	3.01	5.02	3.95	6.17	11.04	4.01	11.04	4.01	14.05	9.03	14.99	10.18
	181831	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.47	1.00	0.00	1.00	0.00	1.00	2.01	1.00	2.47
	182509	0.00	2.01	0.00	3.11	2.01	7.02	2.63	8.63	3.01	6.02	3.01	6.02	5.02	15.05	5.64	17.76
	182510	1.00	0.00	1.84	0.00	3.01	4.01	3.95	4.93	1.00	0.00	1.00	0.00	5.02	4.01	6.79	4.93
	182511	0.00	0.00	0.00	0.00	1.00	3.01	1.32	3.70	3.01	2.01	3.01	2.01	4.01	5.02	4.33	5.71
	182512	0.00	0.00	0.00	0.00	4.01	12.04	5.27	14.80	7.02	9.03	7.02	9.03	11.04	21.07	12.29	23.83
	182513	1.00	0.00	1.84	0.00	5.02	15.05	6.58	18.50	13.05	16.06	13.05	16.06	19.07	31.11	21.47	34.56
	182514	0.00	0.00	0.00	0.00	5.02	5.02	6.58	6.17	12.04	10.04	12.04	10.04	17.06	15.05	18.63	16.20
	182515	1.00	0.00	1.84	0.00	5.02	13.05	6.58	16.03	8.03	13.05	8.03	13.05	14.05	26.09	16.45	29.08
	182516	0.00	0.00	0.00	0.00	8.03	14.05	10.53	17.27	27.10	12.04	27.10	12.04	35.12	26.09	37.63	29.31
	182517	0.00	1.00	0.00	1.56	5.02	10.04	6.58	12.33	13.05	13.05	13.05	13.05	18.06	24.08	19.63	26.93
	182518	0.00	0.00	0.00	0.00	7.02	11.04	9.22	13.57	11.04	11.04	11.04	11.04	18.06	22.08	20.26	24.60
	Subtotal	3.01	3.01	5.51	4.67	48.17	101.36	63.20	124.56	110.39	96.34	110.39	96.34	161.57	200.71	179.10	225.56
1995	181658	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.47	1.00	0.00	1.00	0.00	1.00	2.01	1.00	2.47
	181659	1.00	1.00	1.84	1.56	0.00	1.00	0.00	1.23	0.00	3.01	0.00	3.01	1.00	5.02	1.84	5.80
	181660	0.00	0.00	0.00	0.00	1.00	2.01	1.32	2.47	1.00	3.01	1.00	3.01	2.01	5.02	2.32	5.48
	181661	2.01	2.01	3.67	3.11	0.00	1.00	0.00	1.23	0.00	0.00	0.00	0.00	2.01	3.01	3.67	4.34
	182016	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.47	0.00	2.01	0.00	2.01	0.00	4.01	0.00	4.47

Appendix 12 - 00. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2000. Cont'd

Brood Year	CWT Code	Campbell River (a, b) Adjusted CWTs M	Campbell River (a, b) Adjusted CWTs F	Campbell River (a, b) Estimated CWTs M	Campbell River (a, b) Estimated CWTs F	Quinsam River (a,b) Adjusted CWTs M	Quinsam River (a,b) Adjusted CWTs F	Quinsam River (a,b) Estimated CWTs M	Quinsam River (a,b) Estimated CWTs F	Quinsam Hatchery (a,b) Adjusted CWTs M	Quinsam Hatchery (a,b) Adjusted CWTs F	Quinsam Hatchery (a,b) Estimated CWTs M	Quinsam Hatchery (a,b) Estimated CWTs F	Total (a,b) Adjusted CWTs M	Total (a,b) Adjusted CWTs F	Total (a,b) Estimated CWTs M	Total (a,b) Estimated CWTs F
1995	182017	0.00	4.01	0.00	6.22	0.00	3.01	0.00	3.70	0.00	2.01	0.00	2.01	0.00	9.03	0.00	11.93
Cont'd	182018	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.47	1.00	5.02	1.00	5.02	1.00	7.02	1.00	7.48
	182019	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00
	182020	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.47	1.00	0.00	1.00	0.00	1.00	2.01	1.00	2.47
	182021	0.00	1.00	0.00	1.56	0.00	0.00	0.00	0.00	1.00	6.02	1.00	6.02	1.00	7.02	1.00	7.58
	182022	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00
	Subtotal	3.01	8.03	5.51	12.44	3.01	15.05	3.95	18.50	5.02	21.07	5.02	21.07	11.04	44.16	14.48	52.02
1994	181652	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
	Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Total Quinsam H CWT		6.02	11.04	11.02	17.11	69.24	117.41	90.85	144.29	242.86	118.42	242.86	118.42	318.12	246.87	344.73	279.82
Strays																	
1997	183135	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00
1996	630127	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
	Subtotal	0.00	0.00	0.00	0.00	1.00	0.00	1.32	0.00	1.00	0.00	1.00	0.00	2.00	0.00	2.32	0.00
Total CWT		6.02	11.04	11.02	17.11	70.25	117.41	92.17	144.29	243.86	118.42	243.86	118.42	320.13	246.87	347.04	279.82
Petersen Est. (c)		388	403			1,766	2,051										
Sample Size (d)		212	260			1,346	1,669										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 12 - 01. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2001.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1998	183735	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03	0.00	5.03	0.00	5.03	0.00	5.03	0.00
	183736	0.00	0.00	0.00	0.00	4.02	0.00	5.25	0.00	5.03	0.00	5.03	0.00	9.05	0.00	10.28	0.00
	183737	0.00	0.00	0.00	0.00	5.03	0.00	6.56	0.00	7.04	0.00	7.04	0.00	12.07	0.00	13.60	0.00
	183738	0.00	0.00	0.00	0.00	2.01	1.01	2.62	1.24	4.02	0.00	4.02	0.00	6.04	1.01	6.65	1.24
	183739	0.00	0.00	0.00	0.00	1.01	0.00	1.31	0.00	12.07	0.00	12.07	0.00	13.08	0.00	13.38	0.00
	183740	0.00	0.00	0.00	0.00	8.05	0.00	10.49	0.00	9.05	2.01	9.05	2.01	17.10	2.01	19.55	2.01
	183741	0.00	0.00	0.00	0.00	2.01	0.00	2.62	0.00	9.05	0.00	9.05	0.00	11.07	0.00	11.68	0.00
	183742	0.00	0.00	0.00	0.00	3.02	0.00	3.94	0.00	7.04	0.00	7.04	0.00	10.06	0.00	10.98	0.00
	183743	0.00	0.00	0.00	0.00	7.04	0.00	9.18	0.00	13.08	1.01	13.08	1.01	20.12	1.01	22.26	1.01
	183744	0.00	0.00	0.00	0.00	3.02	1.01	3.94	1.24	14.08	1.01	14.08	1.01	17.10	2.01	18.02	2.25
	183745	0.00	0.00	0.00	0.00	2.01	0.00	2.62	0.00	9.05	0.00	9.05	0.00	11.07	0.00	11.68	0.00
	183746	0.00	0.00	0.00	0.00	6.04	0.00	7.87	0.00	12.07	0.00	12.07	0.00	18.11	0.00	19.94	0.00
	Subtotal	0.00	0.00	0.00	0.00	43.26	2.01	56.41	2.49	106.64	4.02	106.64	4.02	149.90	6.04	163.05	6.51
1997	183031	2.01	0.00	4.26	0.00	12.07	16.10	15.74	19.89	3.02	3.02	3.02	3.02	17.10	19.12	23.02	22.91
	183032	0.00	1.01	0.00	1.78	1.01	6.04	1.31	7.46	11.07	1.01	11.07	1.01	12.07	8.05	12.38	10.24
	183033	0.00	0.00	0.00	0.00	2.01	5.03	2.62	6.22	5.03	1.01	5.03	1.01	7.04	6.04	7.65	7.22
	183034	1.01	0.00	2.13	0.00	9.05	5.03	11.81	6.22	9.05	2.01	9.05	2.01	19.12	7.04	22.99	8.23
	183035	0.00	1.01	0.00	1.78	11.07	23.14	14.43	28.59	20.12	15.09	20.12	15.09	31.19	39.24	34.55	45.46
	183036	0.00	0.00	0.00	0.00	15.09	16.10	19.68	19.89	25.15	10.06	25.15	10.06	40.24	26.16	44.83	29.95
	183037	1.01	1.01	2.13	1.78	22.13	14.08	28.86	17.41	22.13	10.06	22.13	10.06	45.27	25.15	53.12	29.24
	183038	2.01	0.00	4.26	0.00	12.07	15.09	15.74	18.65	24.15	7.04	24.15	7.04	38.23	22.13	44.15	25.69
	183039	1.01	1.01	2.13	1.78	11.07	24.15	14.43	29.84	36.22	21.13	36.22	21.13	48.29	46.28	52.78	52.74
	183040	0.00	0.00	0.00	0.00	15.09	5.03	19.68	6.22	18.11	8.05	18.11	8.05	33.20	13.08	37.79	14.26
	183041	0.00	0.00	0.00	0.00	3.02	11.07	3.94	13.68	23.14	7.04	23.14	7.04	26.16	18.11	27.07	20.72
	183042	0.00	0.00	0.00	0.00	9.05	10.06	11.81	12.43	15.09	12.07	15.09	12.07	24.15	22.13	26.90	24.51
	Subtotal	7.04	4.02	14.92	7.11	122.74	150.91	160.04	186.49	212.28	97.59	212.28	97.59	342.06	252.52	387.24	291.19
1996	181830	0.00	0.00	0.00	0.00	2.01	15.09	2.62	18.65	1.01	3.02	1.01	3.02	3.02	18.11	3.63	21.67
	181831	1.01	1.01	2.13	1.78	3.02	7.04	3.94	8.70	0.00	1.01	0.00	1.01	4.02	9.05	6.07	11.49
	182509	0.00	1.01	0.00	1.78	3.02	9.05	3.94	11.19	1.01	1.01	1.01	1.01	4.02	11.07	4.94	13.97
	182510	0.00	1.01	0.00	1.78	0.00	3.02	0.00	3.73	0.00	1.01	0.00	1.01	0.00	5.03	0.00	6.51
	182511	0.00	2.01	0.00	3.56	1.01	1.01	1.31	1.24	0.00	0.00	0.00	0.00	1.01	3.02	1.31	4.80

Appendix 12 - 01. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2001. Cont'd

Brood Year	CWT Code	Campbell River (a, b) Adjusted CWTs M	Campbell River (a, b) Adjusted CWTs F	Campbell River (a, b) Estimated CWTs M	Campbell River (a, b) Estimated CWTs F	Quinsam River (a,b) Adjusted CWTs M	Quinsam River (a,b) Adjusted CWTs F	Quinsam River (a,b) Estimated CWTs M	Quinsam River (a,b) Estimated CWTs F	Quinsam Hatchery (a,b) Adjusted CWTs M	Quinsam Hatchery (a,b) Adjusted CWTs F	Quinsam Hatchery (a,b) Estimated CWTs M	Quinsam Hatchery (a,b) Estimated CWTs F	Total (a,b) Adjusted CWTs M	Total (a,b) Adjusted CWTs F	Total (a,b) Estimated CWTs M	Total (a,b) Estimated CWTs F
1996	182512	0.00	0.00	0.00	0.00	4.02	13.08	5.25	16.16	2.01	4.02	2.01	4.02	6.04	17.10	7.26	20.19
Cont'd	182513	0.00	0.00	0.00	0.00	3.02	16.10	3.94	19.89	1.01	11.07	1.01	11.07	4.02	27.16	4.94	30.96
	182514	1.01	1.01	2.13	1.78	1.01	14.08	1.31	17.41	3.02	10.06	3.02	10.06	5.03	25.15	6.46	29.24
	182515	1.01	0.00	2.13	0.00	1.01	11.07	1.31	13.68	5.03	10.06	5.03	10.06	7.04	21.13	8.47	23.74
	182516	0.00	1.01	0.00	1.78	2.01	14.08	2.62	17.41	1.01	6.04	1.01	6.04	3.02	21.13	3.63	25.22
	182517	0.00	0.00	0.00	0.00	2.01	10.06	2.62	12.43	1.01	10.06	1.01	10.06	3.02	20.12	3.63	22.49
	182518	1.01	0.00	2.13	0.00	7.04	9.05	9.18	11.19	1.01	6.04	1.01	6.04	9.05	15.09	12.32	17.23
	Subtotal	4.02	7.04	8.53	12.45	29.18	122.74	38.04	151.68	16.10	63.38	16.10	63.38	49.30	193.16	62.67	227.50
1995	182018	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.24	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.24
	182021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.01	0.00	1.01	0.00	1.01
	Subtotal	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.24	0.00	1.01	0.00	1.01	0.00	2.01	0.00	2.25
Total Quinsam H CWT		11.07	11.07	23.45	19.56	195.17	276.66	254.49	341.89	335.02	166.00	335.02	166.00	541.26	453.73	612.95	527.45
Strays																	
1997	182845	0.00	0.00	0.00	0.00	1.01	0.00	1.31	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.31	0.00
	183056	0.00	0.00	0.00	0.00	1.01	0.00	1.31	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.31	0.00
	Subtotal	0.00	0.00	0.00	0.00	2.01	0.00	2.62	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.62	0.00
Total CWT		11.07	11.07	23.45	19.56	197.19	276.66	257.11	341.89	335.02	166.00	335.02	166.00	543.27	453.73	615.58	527.45
Petersen Est. (c)		498	433			4,119	3,774										
Sample Size (d)		235	245			3,159	3,054										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 12 - 02. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2002.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1999	183247	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.02	0.00	3.02	0.00	3.02	0.00	3.02	0.00
	183248	0.00	0.00	0.00	0.00	5.03	0.00	7.03	0.00	2.01	0.00	2.01	0.00	7.04	0.00	9.04	0.00
	183249	0.00	0.00	0.00	0.00	4.02	0.00	5.63	0.00	4.02	0.00	4.02	0.00	8.04	0.00	9.65	0.00
	183250	0.00	0.00	0.00	0.00	2.01	1.01	2.81	1.30	4.02	0.00	4.02	0.00	6.03	1.01	6.84	1.30
	183251	1.01	0.00	1.51	0.00	2.01	0.00	2.81	0.00	5.03	0.00	5.03	0.00	8.04	0.00	9.35	0.00
	183252	0.00	0.00	0.00	0.00	5.03	0.00	7.03	0.00	8.04	0.00	8.04	0.00	13.07	0.00	15.08	0.00
	183253	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.03	0.00	6.03	0.00	6.03	0.00	6.03	0.00
	183254	0.00	0.00	0.00	0.00	4.02	0.00	5.63	0.00	1.01	0.00	1.01	0.00	5.03	0.00	6.63	0.00
	183255	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00	4.02	0.00	4.02	0.00	5.03	0.00	5.43	0.00
	183256	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00	4.02	0.00	4.02	0.00	5.03	0.00	5.43	0.00
	183257	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00	4.02	0.00	4.02	0.00	5.03	0.00	5.43	0.00
	183258	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.01	0.00	1.01	0.00	1.01	0.00
	Subtotal	1.01	0.00	1.51	0.00	25.14	1.01	35.17	1.30	46.26	0.00	46.26	0.00	72.40	1.01	82.94	1.30
1998	183735	0.00	1.01	0.00	1.60	2.01	3.02	2.81	3.91	0.00	0.00	0.00	0.00	2.01	4.02	2.81	5.51
	183736	1.01	2.01	1.51	3.20	4.02	5.03	5.63	6.52	4.02	1.01	4.02	1.01	9.05	8.04	11.16	10.73
	183737	1.01	0.00	1.51	0.00	4.02	9.05	5.63	11.74	5.03	1.01	5.03	1.01	10.06	10.06	12.17	12.74
	183738	0.00	0.00	0.00	0.00	6.03	14.08	8.44	18.26	10.06	2.01	10.06	2.01	16.09	16.09	18.50	20.27
	183739	0.00	0.00	0.00	0.00	10.06	10.06	14.07	13.04	6.03	4.02	6.03	4.02	16.09	14.08	20.10	17.07
	183740	0.00	0.00	0.00	0.00	11.06	6.03	15.47	7.83	5.03	11.06	5.03	11.06	16.09	17.10	20.50	18.89
	183741	0.00	2.01	0.00	3.20	5.03	9.05	7.03	11.74	14.08	6.03	14.08	6.03	19.11	17.10	21.11	20.97
	183742	0.00	0.00	0.00	0.00	7.04	5.03	9.85	6.52	9.05	6.03	9.05	6.03	16.09	11.06	18.90	12.56
	183743	2.01	0.00	3.02	0.00	8.04	5.03	11.25	6.52	14.08	6.03	14.08	6.03	24.13	11.06	28.36	12.56
	183744	0.00	0.00	0.00	0.00	12.07	11.06	16.88	14.35	7.04	9.05	7.04	9.05	19.11	20.11	23.92	23.40
	183745	0.00	0.00	0.00	0.00	8.04	8.04	11.25	10.43	10.06	10.06	10.06	10.06	18.10	18.10	21.31	20.49
	183746	1.01	3.02	1.51	4.80	14.08	7.04	19.69	9.13	7.04	2.01	7.04	2.01	22.12	12.07	28.25	15.94
	Subtotal	5.03	8.04	7.56	12.80	91.51	92.52	128.01	120.00	91.51	58.33	91.51	58.33	188.05	158.89	227.08	191.13
1997	183031	0.00	3.02	0.00	4.80	1.01	6.03	1.41	7.83	0.00	1.01	0.00	1.01	1.01	10.06	1.41	13.63
	183032	0.00	1.01	0.00	1.60	1.01	2.01	1.41	2.61	0.00	0.00	0.00	0.00	1.01	3.02	1.41	4.21
	183033	0.00	0.00	0.00	0.00	1.01	5.03	1.41	6.52	0.00	0.00	0.00	0.00	1.01	5.03	1.41	6.52
	183034	0.00	0.00	0.00	0.00	0.00	10.06	0.00	13.04	0.00	0.00	0.00	0.00	0.00	10.06	0.00	13.04
	183035	1.01	1.01	1.51	1.60	0.00	20.11	0.00	26.09	2.01	11.06	2.01	11.06	3.02	32.18	3.52	38.75

Appendix 12 - 02. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2002. Cont'd

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1997	183036	0.00	0.00	0.00	0.00	4.02	19.11	5.63	24.78	1.01	6.03	1.01	6.03	5.03	25.14	6.63	30.82
Cont'd	183037	1.01	2.01	1.51	3.20	6.03	15.08	8.44	19.57	5.03	5.03	5.03	5.03	12.07	22.12	14.98	27.79
	183038	1.01	1.01	1.51	1.60	5.03	13.07	7.03	16.96	4.02	3.02	4.02	3.02	10.06	17.10	12.57	21.57
	183039	2.01	0.00	3.02	0.00	3.02	14.08	4.22	18.26	1.01	7.04	1.01	7.04	6.03	21.12	8.25	25.30
	183040	0.00	1.01	0.00	1.60	4.02	11.06	5.63	14.35	1.01	7.04	1.01	7.04	5.03	19.11	6.63	22.99
	183041	0.00	1.01	0.00	1.60	2.01	14.08	2.81	18.26	1.01	7.04	1.01	7.04	3.02	22.12	3.82	26.90
	183042	0.00	0.00	0.00	0.00	6.03	12.07	8.44	15.65	4.02	5.03	4.02	5.03	10.06	17.10	12.46	20.68
	Subtotal	5.03	10.06	7.56	16.00	33.19	141.79	46.42	183.91	19.11	52.29	19.11	52.29	57.32	204.14	73.09	252.21
1996	182512	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.01	0.00	1.01	0.00	1.01
	182514	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00
	Subtotal	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00	0.00	1.01	0.00	1.01	1.01	1.01	1.41	1.01
Total Quinsam H CWT		11.06	18.10	16.62	28.80	150.84	235.32	211.01	305.22	156.88	111.62	156.88	111.62	318.78	365.04	384.51	445.64
Strays																	
1999	183838	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00
	184132	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.01	0.00	1.01	0.00	1.01	0.00
1998	183821	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.41	0.00
	183826	0.00	1.01	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	1.60
	Subtotal	0.00	1.01	0.00	1.60	2.01	0.00	2.81	0.00	1.01	0.00	1.01	0.00	3.02	1.01	3.82	1.60
Total CWT		11.06	19.11	16.62	30.40	152.85	235.32	213.83	305.22	157.88	111.62	157.88	111.62	321.80	366.05	388.33	447.24
Petersen Est. (c)		541	716			3,258	4,624										
Sample Size (d)		360	450			2,329	3,565										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 12 - 03. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2003.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2000	184452	0.00	0.00	0.00	0.00	2.00	0.00	3.44	0.00	2.00	0.00	2.00	0.00	4.00	0.00	5.44	0.00
	184453	0.00	0.00	0.00	0.00	1.00	0.00	1.72	0.00	4.00	0.00	4.00	0.00	5.00	0.00	5.72	0.00
	184454	1.00	0.00	1.57	0.00	3.00	0.00	5.16	0.00	1.00	0.00	1.00	0.00	5.00	0.00	7.73	0.00
	184455	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
	184456	0.00	0.00	0.00	0.00	1.00	0.00	1.72	0.00	6.00	0.00	6.00	0.00	7.00	0.00	7.72	0.00
	184457	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.00	7.00	0.00	7.00	0.00	7.00	0.00
	184458	0.00	0.00	0.00	0.00	1.00	0.00	1.72	0.00	6.00	0.00	6.00	0.00	7.00	0.00	7.72	0.00
	184459	0.00	0.00	0.00	0.00	1.00	0.00	1.72	0.00	3.00	0.00	3.00	0.00	4.00	0.00	4.72	0.00
	184460	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
	184461	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
	184462	1.00	0.00	1.57	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	0.00	3.57	0.00
	Subtotal	2.00	0.00	3.14	0.00	9.00	0.00	15.47	0.00	36.00	0.00	36.00	0.00	47.00	0.00	54.61	0.00
1999	183247	0.00	0.00	0.00	0.00	2.00	5.00	3.44	6.44	2.00	1.00	2.00	1.00	4.00	6.00	5.44	7.44
	183248	0.00	0.00	0.00	0.00	3.00	4.00	5.16	5.15	4.00	4.00	4.00	4.00	7.00	8.00	9.16	9.15
	183249	0.00	1.00	0.00	1.49	3.00	3.00	5.16	3.86	3.00	4.00	3.00	4.00	6.00	8.00	8.16	9.36
	183250	0.00	0.00	0.00	0.00	2.00	5.00	3.44	6.44	5.00	0.00	5.00	0.00	7.00	5.00	8.44	6.44
	183251	0.00	0.00	0.00	0.00	2.00	4.00	3.44	5.15	10.00	9.00	10.00	9.00	12.00	13.00	13.44	14.15
	183252	0.00	0.00	0.00	0.00	2.00	4.00	3.44	5.15	4.00	5.00	4.00	5.00	6.00	9.00	7.44	10.15
	183253	0.00	0.00	0.00	0.00	1.00	1.00	1.72	1.29	8.00	3.00	8.00	3.00	9.00	4.00	9.72	4.29
	183254	1.00	0.00	1.57	0.00	4.00	1.00	6.88	1.29	6.00	3.00	6.00	3.00	11.00	4.00	14.45	4.29
	183255	0.00	0.00	0.00	0.00	2.00	1.00	3.44	1.29	8.00	3.00	8.00	3.00	10.00	4.00	11.44	4.29
	183256	0.00	0.00	0.00	0.00	1.00	1.00	1.72	1.29	13.00	3.00	13.00	3.00	14.00	4.00	14.72	4.29
	183257	0.00	0.00	0.00	0.00	3.00	2.00	5.16	2.58	8.00	1.00	8.00	1.00	11.00	3.00	13.16	3.58
	183258	0.00	0.00	0.00	0.00	1.00	0.00	1.72	0.00	5.00	0.00	5.00	0.00	6.00	0.00	6.72	0.00
	Subtotal	1.00	1.00	1.57	1.49	26.00	31.00	44.70	39.93	76.00	36.00	76.00	36.00	103.00	68.00	122.27	77.42
1998	183735	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
	183736	1.00	0.00	1.57	0.00	0.00	3.00	0.00	3.86	0.00	0.00	0.00	0.00	1.00	3.00	1.57	3.86
	183737	1.00	1.00	1.57	1.49	0.00	1.00	0.00	1.29	1.00	0.00	1.00	0.00	2.00	2.00	2.57	2.78
	183738	0.00	0.00	0.00	0.00	2.00	3.00	3.44	3.86	1.00	1.00	1.00	1.00	3.00	4.00	4.44	4.86
	183739	0.00	0.00	0.00	0.00	1.00	1.00	1.72	1.29	1.00	2.00	1.00	2.00	2.00	3.00	2.72	3.29
	183740	1.00	1.00	1.57	1.49	0.00	1.00	0.00	1.29	1.00	2.00	1.00	2.00	2.00	4.00	2.57	4.78

Appendix 12 - 03. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2003. Cont'd

Brood Year	CWT Code	Campbell River (a, b) Adjusted CWTs M	Campbell River (a, b) Adjusted CWTs F	Campbell River (a, b) Estimated CWTs M	Campbell River (a, b) Estimated CWTs F	Quinsam River (a,b) Adjusted CWTs M	Quinsam River (a,b) Adjusted CWTs F	Quinsam River (a,b) Estimated CWTs M	Quinsam River (a,b) Estimated CWTs F	Quinsam Hatchery (a,b) Adjusted CWTs M	Quinsam Hatchery (a,b) Adjusted CWTs F	Quinsam Hatchery (a,b) Estimated CWTs M	Quinsam Hatchery (a,b) Estimated CWTs F	Total (a,b) Adjusted CWTs M	Total (a,b) Adjusted CWTs F	Total (a,b) Estimated CWTs M	Total (a,b) Estimated CWTs F
1998	183741	0.00	0.00	0.00	0.00	1.00	4.00	1.72	5.15	2.00	4.00	2.00	4.00	3.00	8.00	3.72	9.15
Cont'd	183742	0.00	0.00	0.00	0.00	2.00	4.00	3.44	5.15	1.00	1.00	1.00	1.00	3.00	5.00	4.44	6.15
	183743	0.00	1.00	0.00	1.49	3.00	4.00	5.16	5.15	0.00	3.00	0.00	3.00	3.00	8.00	5.16	9.65
	183744	0.00	0.00	0.00	0.00	3.00	2.00	5.16	2.58	1.00	4.00	1.00	4.00	4.00	6.00	6.16	6.58
	183745	0.00	0.00	0.00	0.00	1.00	2.00	1.72	2.58	2.00	9.00	2.00	9.00	3.00	11.00	3.72	11.58
	183746	0.00	0.00	0.00	0.00	0.00	3.00	0.00	3.86	1.00	4.00	1.00	4.00	1.00	7.00	1.00	7.86
	Subtotal	3.00	3.00	4.71	4.48	13.00	28.00	22.35	36.07	11.00	31.00	11.00	31.00	27.00	62.00	38.06	71.55
1997	183039	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.58	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.58
	183040	0.00	0.00	0.00	0.00	1.00	0.00	1.72	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.72	0.00
	Subtotal	0.00	0.00	0.00	0.00	1.00	2.00	1.72	2.58	0.00	0.00	0.00	0.00	1.00	2.00	1.72	2.58
Total Quinsam H CWT		6.00	4.00	9.42	5.97	49.00	61.00	84.24	78.57	123.00	67.00	123.00	67.00	178.00	132.00	216.66	151.54
Total CWT		6.00	4.00	9.42	5.97	49.00	61.00	84.24	78.57	123.00	67.00	123.00	67.00	178.00	132.00	216.66	151.54
Petersen Est. (c)		256	312			1,996	1,936										
Sample Size (d)		163	209			1,161	1,503										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 12 - 04. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2004.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2001	184732	0.00	0.00	0.00	0.00	2.00	0.00	3.95	0.00	9.02	0.00	9.02	0.00	11.02	0.00	12.96	0.00
	184733	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.01	0.00	6.01	0.00	6.01	0.00	6.01	0.00
	184734	0.00	0.00	0.00	0.00	3.01	1.00	5.92	1.63	6.01	1.00	6.01	1.00	9.02	2.00	11.93	2.63
	184735	1.00	0.00	2.85	0.00	2.00	0.00	3.95	0.00	5.01	0.00	5.01	0.00	8.02	0.00	11.80	0.00
	184736	1.00	0.00	2.85	0.00	1.00	0.00	1.97	0.00	9.02	0.00	9.02	0.00	11.02	0.00	13.84	0.00
	184737	0.00	0.00	0.00	0.00	3.01	0.00	5.92	0.00	11.02	0.00	11.02	0.00	14.03	0.00	16.94	0.00
	184738	0.00	0.00	0.00	0.00	1.00	0.00	1.97	0.00	9.02	0.00	9.02	0.00	10.02	0.00	10.99	0.00
	184739	0.00	0.00	0.00	0.00	2.00	0.00	3.95	0.00	9.02	0.00	9.02	0.00	11.02	0.00	12.96	0.00
	184740	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.01	0.00	5.01	0.00	5.01	0.00	5.01	0.00
	184741	0.00	0.00	0.00	0.00	1.00	0.00	1.97	0.00	6.01	0.00	6.01	0.00	7.02	0.00	7.99	0.00
	184742	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.01	0.00	6.01	0.00	6.01	0.00	6.01	0.00
	184743	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.01	0.00	3.01	0.00	3.01	0.00	3.01	0.00
	Subtotal	2.00	0.00	5.69	0.00	15.03	1.00	29.59	1.63	84.18	1.00	84.18	1.00	101.22	2.00	119.47	2.63
2000	184452	2.00	0.00	5.69	0.00	3.01	2.00	5.92	3.25	8.02	7.02	8.02	7.02	13.03	9.02	19.63	10.27
	184453	0.00	0.00	0.00	0.00	8.02	6.01	15.78	9.75	7.02	5.01	7.02	5.01	15.03	11.02	22.80	14.76
	184454	0.00	0.00	0.00	0.00	1.00	2.00	1.97	3.25	1.00	2.00	1.00	2.00	2.00	4.01	2.97	5.26
	184455	1.00	1.00	2.85	2.01	3.01	6.01	5.92	9.75	1.00	0.00	1.00	0.00	5.01	7.02	9.77	11.76
	184456	1.00	0.00	2.85	0.00	2.00	3.01	3.95	4.88	10.02	6.01	10.02	6.01	13.03	9.02	16.81	10.89
	184457	0.00	0.00	0.00	0.00	2.00	3.01	3.95	4.88	13.03	7.02	13.03	7.02	15.03	10.02	16.97	11.89
	184458	0.00	0.00	0.00	0.00	4.01	4.01	7.89	6.50	8.02	8.02	8.02	8.02	12.03	12.03	15.91	14.52
	184459	1.00	0.00	2.85	0.00	2.00	2.00	3.95	3.25	7.02	3.01	7.02	3.01	10.02	5.01	13.81	6.26
	184460	0.00	0.00	0.00	0.00	4.01	2.00	7.89	3.25	8.02	6.01	8.02	6.01	12.03	8.02	15.91	9.26
	184461	0.00	0.00	0.00	0.00	5.01	4.01	9.86	6.50	10.02	5.01	10.02	5.01	15.03	9.02	19.88	11.51
	184462	1.00	2.00	2.85	4.02	0.00	2.00	0.00	3.25	11.02	5.01	11.02	5.01	12.03	9.02	13.87	12.28
	184463	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.01	0.00	5.01	0.00	5.01	0.00	5.01	0.00
	Subtotal	6.01	3.01	17.08	6.02	34.07	36.08	67.07	58.52	89.19	54.12	89.19	54.12	129.28	93.20	173.35	118.66
1999	183247	1.00	1.00	2.85	2.01	2.00	3.01	3.95	4.88	0.00	2.00	0.00	2.00	3.01	6.01	6.79	8.89
	183248	0.00	1.00	0.00	2.01	0.00	5.01	0.00	8.13	0.00	1.00	0.00	1.00	0.00	7.02	0.00	11.14
	183249	0.00	2.00	0.00	4.02	0.00	1.00	0.00	1.63	3.01	1.00	3.01	1.00	3.01	4.01	3.01	6.64
	183250	0.00	3.01	0.00	6.02	0.00	2.00	0.00	3.25	1.00	1.00	1.00	1.00	1.00	6.01	1.00	10.28
	183251	0.00	0.00	0.00	0.00	2.00	0.00	3.95	0.00	2.00	5.01	2.00	5.01	4.01	5.01	5.95	5.01

Appendix 12 - 04. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2004. Cont'd

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1999	183252	0.00	0.00	0.00	0.00	1.00	6.01	1.97	9.75	3.01	9.02	3.01	9.02	4.01	15.03	4.98	18.77
Cont'd	183253	0.00	0.00	0.00	0.00	0.00	7.02	0.00	11.38	3.01	3.01	3.01	3.01	3.01	10.02	3.01	14.39
	183254	1.00	0.00	2.85	0.00	1.00	0.00	1.97	0.00	2.00	1.00	2.00	1.00	4.01	1.00	6.82	1.00
	183255	0.00	0.00	0.00	0.00	1.00	2.00	1.97	3.25	0.00	5.01	0.00	5.01	1.00	7.02	1.97	8.26
	183256	0.00	1.00	0.00	2.01	1.00	5.01	1.97	8.13	1.00	4.01	1.00	4.01	2.00	10.02	2.97	14.14
	183257	0.00	0.00	0.00	0.00	1.00	2.00	1.97	3.25	7.02	7.02	7.02	7.02	8.02	9.02	8.99	10.27
	183258	1.00	0.00	2.85	0.00	3.01	3.01	5.92	4.88	3.01	5.01	3.01	5.01	7.02	8.02	11.77	9.89
	Subtotal	3.01	8.02	8.54	16.06	12.03	36.08	23.67	58.52	25.05	44.10	25.05	44.10	40.09	88.19	57.27	118.68
1998	183739	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.63	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.63
	Subtotal	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.63	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.63
Total Quinsam H CWT		11.02	11.02	31.32	22.09	61.13	74.16	120.33	120.30	198.43	99.21	198.43	99.21	270.59	184.40	350.08	241.60
Strays																	
2001	184628	0.00	0.00	0.00	0.00	1.00	0.00	1.97	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.97	0.00
	184641	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.63	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.63
	631375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
	631405	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
	636322	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
2000	093256	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
	184556	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.63	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.63
	Subtotal	0.00	0.00	0.00	0.00	2.00	2.00	2.97	3.25	3.00	0.00	3.00	0.00	5.00	2.00	5.97	3.25
Total CWT		11.02	11.02	31.32	22.09	63.13	76.16	123.30	123.55	201.43	99.21	201.43	99.21	275.59	186.40	356.05	244.85
Petersen Est. (c)		662	537			2,301	2,537										
Sample Size (d)		233	268			1,169	1,564										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 12 - 05. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2005.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2002	185115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	0.00	6.00	0.00	6.00	0.00	6.00	0.00
	185116	0.00	0.00	0.00	0.00	2.00	0.00	3.77	0.00	4.00	0.00	4.00	0.00	6.00	0.00	7.77	0.00
	185117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	0.00	7.00	0.00	7.00	0.00	7.00	0.00
	185118	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
	185119	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00	3.00	0.00
	185120	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.57	8.00	1.00	8.00	1.00	8.00	2.00	8.00	2.57
	185121	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00
	185122	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	0.00	6.00	0.00	6.00	0.00	6.00	0.00
	185123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	1.00	5.00	1.00	5.00	1.00	5.00	1.00
	185124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.00	0.00	14.00	0.00	14.00	0.00	14.00	0.00
	185125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.00	0.00	13.00	0.00	13.00	0.00	13.00	0.00
	185126	0.00	0.00	0.00	0.00	1.00	0.00	1.88	0.00	2.00	0.00	2.00	0.00	3.00	0.00	3.88	0.00
	Subtotal	0.00	0.00	0.00	0.00	3.00	1.00	5.65	1.57	76.00	2.00	76.00	2.00	79.00	3.00	81.65	3.57
2001	184732	0.00	0.00	0.00	0.00	5.00	5.00	9.42	7.83	8.00	4.00	8.00	4.00	13.00	9.00	17.42	11.83
	184733	0.00	1.00	0.00	1.82	1.00	3.00	1.88	4.70	7.00	5.00	7.00	5.00	8.00	9.00	8.88	11.52
	184734	1.00	0.00	2.08	0.00	2.00	5.00	3.77	7.83	4.00	1.00	4.00	1.00	7.00	6.00	9.85	8.83
	184735	1.00	0.00	2.08	0.00	2.00	2.00	3.77	3.13	10.00	2.00	10.00	2.00	13.00	4.00	15.85	5.13
	184736	0.00	0.00	0.00	0.00	4.00	2.00	7.54	3.13	10.00	6.00	10.00	6.00	14.00	8.00	17.54	9.13
	184737	0.00	0.00	0.00	0.00	8.00	5.00	15.08	7.83	14.00	10.00	14.00	10.00	22.00	15.00	29.08	17.83
	184738	0.00	0.00	0.00	0.00	8.00	3.00	15.08	4.70	16.00	9.00	16.00	9.00	24.00	12.00	31.08	13.70
	184739	0.00	0.00	0.00	0.00	3.00	5.00	5.65	7.83	10.00	5.00	10.00	5.00	13.00	10.00	15.65	12.83
	184740	0.00	0.00	0.00	0.00	2.00	0.00	3.77	0.00	15.00	11.00	15.00	11.00	17.00	11.00	18.77	11.00
	184741	0.00	0.00	0.00	0.00	4.00	0.00	7.54	0.00	8.00	13.00	8.00	13.00	12.00	13.00	15.54	13.00
	184742	0.00	0.00	0.00	0.00	0.00	2.00	0.00	3.13	17.00	11.00	17.00	11.00	17.00	13.00	17.00	14.13
	184743	0.00	0.00	0.00	0.00	1.00	0.00	1.88	0.00	11.00	2.00	11.00	2.00	12.00	2.00	12.88	2.00
	Subtotal	2.00	1.00	4.17	1.82	40.00	32.00	75.40	50.10	130.00	79.00	130.00	79.00	172.00	112.00	209.56	130.92
2000	184452	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.57	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.57
	184453	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.57	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.57
	184455	0.00	0.00	0.00	0.00	1.00	2.00	1.88	3.13	0.00	0.00	0.00	0.00	1.00	2.00	1.88	3.13
	184456	0.00	0.00	0.00	0.00	0.00	3.00	0.00	4.70	2.00	4.00	2.00	4.00	2.00	7.00	2.00	8.70
	184457	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.57	0.00	5.00	0.00	5.00	0.00	6.00	0.00	6.57

Appendix 12 - 05. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2005. Cont'd

		Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
Brood Year	CWT Code	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2000	184458	0.00	0.00	0.00	0.00	1.00	2.00	1.88	3.13	1.00	2.00	1.00	2.00	2.00	4.00	2.88	5.13
Cont'd	184459	0.00	0.00	0.00	0.00	1.00	1.00	1.88	1.57	2.00	3.00	2.00	3.00	3.00	4.00	3.88	4.57
	184460	0.00	2.00	0.00	3.64	0.00	3.00	0.00	4.70	0.00	3.00	0.00	3.00	0.00	8.00	0.00	11.34
	184461	0.00	0.00	0.00	0.00	2.00	1.00	3.77	1.57	1.00	3.00	1.00	3.00	3.00	4.00	4.77	4.57
	184462	0.00	0.00	0.00	0.00	1.00	1.00	1.88	1.57	2.00	3.00	2.00	3.00	3.00	4.00	3.88	4.57
	184463	0.00	0.00	0.00	0.00	0.00	5.00	0.00	7.83	0.00	4.00	0.00	4.00	0.00	9.00	0.00	11.83
	Subtotal	0.00	2.00	0.00	3.64	6.00	21.00	11.31	32.88	9.00	28.00	9.00	28.00	15.00	51.00	20.31	64.52
1999	183248	0.00	0.00	0.00	0.00	1.00	0.00	1.88	0.00	1.00	0.00	1.00	0.00	2.00	0.00	2.88	0.00
	183254	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
	183258	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
	Subtotal	0.00	0.00	0.00	0.00	1.00	0.00	1.88	0.00	1.00	2.00	1.00	2.00	2.00	2.00	2.88	2.00
Total Quinsam H CWT		2.00	3.00	4.17	5.46	50.00	54.00	94.25	84.54	216.00	111.00	216.00	111.00	268.00	168.00	314.41	201.00
Strays																	
2001	184762	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
2000	184843	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total CWT		2.00	3.00	4.17	5.46	50.00	54.00	94.25	84.54	217.00	112.00	217.00	112.00	269.00	169.00	315.41	202.00
Petersen Est. (c)		275	242			1,327	1,968										
Sample Size (d)		132	133			704	1,257										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 12 - 06. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2006.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2003	182548	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.05	0.00	12.05	0.00	12.05	0.00	12.05	0.00
	182549	0.00	0.00	0.00	0.00	0.00	2.01	0.00	3.62	12.05	1.00	12.05	1.00	12.05	3.01	12.05	4.62
	184809	0.00	0.00	0.00	0.00	2.01	0.00	4.20	0.00	4.02	1.00	4.02	1.00	6.02	1.00	8.21	1.00
	184810	0.00	0.00	0.00	0.00	1.00	0.00	2.10	0.00	8.03	2.01	8.03	2.01	9.04	2.01	10.13	2.01
	184811	1.00	0.00	1.68	0.00	0.00	2.01	0.00	3.62	9.04	0.00	9.04	0.00	10.04	2.01	10.71	3.62
	184812	1.00	0.00	1.68	0.00	2.01	0.00	4.20	0.00	9.04	0.00	9.04	0.00	12.05	0.00	14.91	0.00
	184813	1.00	0.00	1.68	0.00	0.00	0.00	0.00	0.00	15.06	1.00	15.06	1.00	16.07	1.00	16.74	1.00
	185003	1.00	0.00	1.68	0.00	0.00	0.00	0.00	0.00	6.02	0.00	6.02	0.00	7.03	0.00	7.70	0.00
	185004	1.00	0.00	1.68	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.01	0.00	3.01	0.00	3.68	0.00
	185005	0.00	0.00	0.00	0.00	2.01	0.00	4.20	0.00	5.02	0.00	5.02	0.00	7.03	0.00	9.22	0.00
	185006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.04	1.00	10.04	1.00	10.04	1.00	10.04	1.00
	185417	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.01	0.00	2.01	0.00	2.01	0.00
	Subtotal	5.02	0.00	8.38	0.00	7.03	4.02	14.69	7.23	94.39	6.02	94.39	6.02	106.43	10.04	117.45	13.26
2002	185115	1.00	0.00	1.68	0.00	3.01	1.00	6.30	1.81	5.02	1.00	5.02	1.00	9.04	2.01	12.99	2.81
	185116	0.00	0.00	0.00	0.00	2.01	0.00	4.20	0.00	1.00	1.00	1.00	1.00	3.01	1.00	5.20	1.00
	185117	1.00	1.00	1.68	1.79	4.02	7.03	8.39	12.66	3.01	5.02	3.01	5.02	8.03	13.05	13.08	19.47
	185118	0.00	0.00	0.00	0.00	0.00	2.01	0.00	3.62	0.00	1.00	0.00	1.00	0.00	3.01	0.00	4.62
	185119	0.00	1.00	0.00	1.79	0.00	5.02	0.00	9.04	5.02	8.03	5.02	8.03	5.02	14.06	5.02	18.87
	185120	1.00	0.00	1.68	0.00	2.01	9.04	4.20	16.27	9.04	10.04	9.04	10.04	12.05	19.08	14.91	26.31
	185121	0.00	2.01	0.00	3.59	1.00	1.00	2.10	1.81	10.04	9.04	10.04	9.04	11.05	12.05	12.14	14.43
	185122	2.01	1.00	3.35	1.79	1.00	7.03	2.10	12.66	6.02	6.02	6.02	6.02	9.04	14.06	11.47	20.48
	185123	1.00	0.00	1.68	0.00	0.00	5.02	0.00	9.04	11.05	3.01	11.05	3.01	12.05	8.03	12.72	12.05
	185124	0.00	2.01	0.00	3.59	0.00	2.01	0.00	3.62	6.02	8.03	6.02	8.03	6.02	12.05	6.02	15.24
	185125	0.00	0.00	0.00	0.00	5.02	6.02	10.49	10.85	11.05	9.04	11.05	9.04	16.07	15.06	21.54	19.88
	185126	0.00	0.00	0.00	0.00	3.01	3.01	6.30	5.42	12.05	6.02	12.05	6.02	15.06	9.04	18.34	11.45
	Subtotal	6.02	7.03	10.05	12.56	21.09	48.20	44.07	86.78	79.32	67.27	79.32	67.27	106.43	122.50	133.44	166.62
2001	184732	0.00	0.00	0.00	0.00	1.00	2.01	2.10	3.62	1.00	1.00	1.00	1.00	2.01	3.01	3.10	4.62
	184733	1.00	0.00	1.68	0.00	1.00	5.02	2.10	9.04	0.00	1.00	0.00	1.00	2.01	6.02	3.77	10.04
	184734	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	0.00	2.01	0.00	2.01	0.00	2.01
	184735	0.00	1.00	0.00	1.79	1.00	1.00	2.10	1.81	0.00	1.00	0.00	1.00	1.00	3.01	2.10	4.61
	184736	0.00	0.00	0.00	0.00	4.02	7.03	8.39	12.66	2.01	4.02	2.01	4.02	6.02	11.05	10.40	16.67

Appendix 12 - 06. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2006. Cont'd

Brood Year	CWT Code	Campbell River (a, b) Adjusted CWTs M	Campbell River (a, b) Adjusted CWTs F	Campbell River (a, b) Estimated CWTs M	Campbell River (a, b) Estimated CWTs F	Quinsam River (a,b) Adjusted CWTs M	Quinsam River (a,b) Adjusted CWTs F	Quinsam River (a,b) Estimated CWTs M	Quinsam River (a,b) Estimated CWTs F	Quinsam Hatchery (a,b) Adjusted CWTs M	Quinsam Hatchery (a,b) Adjusted CWTs F	Quinsam Hatchery (a,b) Estimated CWTs M	Quinsam Hatchery (a,b) Estimated CWTs F	Total (a,b) Adjusted CWTs M	Total (a,b) Adjusted CWTs F	Total (a,b) Estimated CWTs M	Total (a,b) Estimated CWTs F
2001	184737	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.81	3.01	5.02	3.01	5.02	3.01	6.02	3.01	6.83
Cont'd	184738	0.00	0.00	0.00	0.00	1.00	4.02	2.10	7.23	3.01	6.02	3.01	6.02	4.02	10.04	5.11	13.26
	184739	0.00	1.00	0.00	1.79	2.01	5.02	4.20	9.04	2.01	6.02	2.01	6.02	4.02	12.05	6.21	16.86
	184740	0.00	0.00	0.00	0.00	1.00	6.02	2.10	10.85	2.01	6.02	2.01	6.02	3.01	12.05	4.11	16.87
	184741	0.00	0.00	0.00	0.00	1.00	7.03	2.10	12.66	4.02	5.02	4.02	5.02	5.02	12.05	6.11	17.68
	184742	0.00	0.00	0.00	0.00	3.01	9.04	6.30	16.27	1.00	4.02	1.00	4.02	4.02	13.05	7.30	20.29
	184743	0.00	0.00	0.00	0.00	0.00	2.01	0.00	3.62	10.04	7.03	10.04	7.03	10.04	9.04	10.04	10.64
	Subtotal	1.00	2.01	1.68	3.59	15.06	49.20	31.48	88.59	28.11	48.20	28.11	48.20	44.18	99.41	61.27	140.38
Total Quinsam H CWT		12.05	9.04	20.11	16.15	43.18	101.41	90.23	182.60	201.82	121.50	201.82	121.50	257.05	231.95	312.16	320.25
Strays 2002	185150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Total CWT		12.05	9.04	20.11	16.15	43.18	101.41	90.23	182.60	202.83	121.50	202.83	121.50	258.05	231.95	313.17	320.25
Petersen Est. (c)		564	858			1,720	2,492										
Sample Size (d)		338	480			823	1,384										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 12 - 07. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2007.

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2004	182550	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.05	0.00	3.05	0.00	3.05	0.00	3.05	0.00
	182818	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.05	0.00	3.05	0.00	3.05	0.00	3.05	0.00
	182819	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.13	0.00	7.13	0.00	7.13	0.00	7.13	0.00
	182820	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00	2.04	0.00	2.04	0.00	2.04	0.00
	183605	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00	2.04	0.00	2.04	0.00	2.04	0.00
	184814	0.00	0.00	0.00	0.00	1.02	0.00	2.08	0.00	8.15	1.02	8.15	1.02	9.16	1.02	10.22	1.02
	184815	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.11	0.00	6.11	0.00	6.11	0.00	6.11	0.00
	184816	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	1.02	2.04	1.02	2.04	1.02	2.04	1.02
	184817	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.02	0.00	1.02	0.00	1.02	0.00
	184818	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.11	0.00	6.11	0.00	6.11	0.00	6.11	0.00
	185020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.11	0.00	6.11	0.00	6.11	0.00	6.11	0.00
	185025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.15	0.00	8.15	0.00	8.15	0.00	8.15	0.00
	Subtotal	0.00	0.00	0.00	0.00	1.02	0.00	2.08	0.00	54.98	2.04	54.98	2.04	56.00	2.04	57.05	2.04
2003	182548	0.00	0.00	0.00	0.00	1.02	0.00	2.08	0.00	17.31	11.20	17.31	11.20	18.33	11.20	19.38	11.20
	182549	0.00	1.02	0.00	1.82	1.02	1.02	2.08	1.79	16.29	15.27	16.29	15.27	17.31	17.31	18.37	18.88
	184809	0.00	0.00	0.00	0.00	2.04	1.02	4.15	1.79	9.16	7.13	9.16	7.13	11.20	8.15	13.31	8.92
	184810	0.00	0.00	0.00	0.00	2.04	2.04	4.15	3.58	13.24	8.15	13.24	8.15	15.27	10.18	17.39	11.73
	184811	0.00	0.00	0.00	0.00	0.00	2.04	0.00	3.58	10.18	12.22	10.18	12.22	10.18	14.25	10.18	15.80
	184812	0.00	0.00	0.00	0.00	1.02	0.00	2.08	0.00	17.31	8.15	17.31	8.15	18.33	8.15	19.38	8.15
	184813	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79	15.27	9.16	15.27	9.16	15.27	10.18	15.27	10.95
	185003	1.02	0.00	1.95	0.00	1.02	2.04	2.08	3.58	9.16	7.13	9.16	7.13	11.20	9.16	13.19	10.71
	185004	1.02	0.00	1.95	0.00	2.04	2.04	4.15	3.58	8.15	3.05	8.15	3.05	11.20	5.09	14.24	6.64
	185005	3.05	0.00	5.84	0.00	2.04	2.04	4.15	3.58	6.11	5.09	6.11	5.09	11.20	7.13	16.10	8.67
	185006	0.00	0.00	0.00	0.00	2.04	2.04	4.15	3.58	6.11	4.07	6.11	4.07	8.15	6.11	10.26	7.65
	185417	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79	6.11	7.13	6.11	7.13	6.11	8.15	6.11	8.92
	Subtotal	5.09	1.02	9.74	1.82	14.25	16.29	29.06	28.65	134.39	97.74	134.39	97.74	153.74	115.05	173.19	128.21
2002	185115	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79
	185116	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.02	0.00	1.02	0.00	1.02	0.00
	185119	0.00	0.00	0.00	0.00	1.02	2.04	2.08	3.58	0.00	5.09	0.00	5.09	1.02	7.13	2.08	8.67
	185120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.02	0.00	1.02	0.00	1.02
	185121	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00	2.04	0.00	2.04	0.00	2.04

Appendix 12 - 07. Estimates of the total escapement of CWT Chinook salmon to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2007. Cont'd

Brood Year	CWT Code	Campbell River (a, b)				Quinsam River (a,b)				Quinsam Hatchery (a,b)				Total (a,b)			
		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs		Adjusted CWTs		Estimated CWTs	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2002	185122	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	5.09	1.02	5.09	1.02	5.09	1.02	5.09
Cont'd	185123	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79	0.00	1.02	0.00	1.02	0.00	2.04	0.00	2.81
	185124	0.00	1.02	0.00	1.82	0.00	4.07	0.00	7.16	1.02	2.04	1.02	2.04	1.02	7.13	1.02	11.02
	185125	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79	1.02	2.04	1.02	2.04	1.02	3.05	1.02	3.83
	185126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
	Subtotal	0.00	1.02	0.00	1.82	1.02	9.16	2.08	16.11	5.09	19.34	5.09	19.34	6.11	29.53	7.17	37.28
2001	184736	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79
	184737	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.02	0.00	1.02	0.00	1.02
	184738	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79
	184741	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.02	0.00	1.02	0.00	1.02
	184742	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.02	0.00	1.02	0.00	1.02	0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00	2.04	0.00	3.58	1.02	2.04	1.02	2.04	1.02	4.07	1.02	5.62
Total Quinsam H CWT		5.09	2.04	9.74	3.64	16.29	27.49	33.21	48.34	195.48	121.16	195.48	121.16	216.86	150.68	238.43	173.14
Strays																	
2004	183718	1.02	0.00	1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.95	0.00
2003	185731	0.00	2.04	0.00	3.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00	3.64
2002	185336	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79	0.00	0.00	0.00	0.00	0.00	1.02	0.00	1.79
	Subtotal	1.02	2.04	1.95	3.64	0.00	1.02	0.00	1.79	0.00	0.00	0.00	0.00	1.02	3.05	1.95	5.43
Total CWT		6.11	4.07	11.68	7.29	16.29	28.51	33.21	50.13	195.48	121.16	195.48	121.16	217.88	153.74	240.38	178.57
Petersen Est. (c)		285	365			787	1,238										
Sample Size (d)		149	204			386	704										

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) From Appendix 9.

(d) Campbell River data from Appendix 17 and Quinsam River data from Appendix 18.

(e) Two decimal places are carried for the adjusted CWTs in order to calculate the expanded hatchery contribution in Appendix 13.

Appendix 13 - 99. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 1999.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1996	181830	29,220	176,418	7.0	0.00	0.00	12.37	0.00	105.75	7.05	118.12	7.05
	181831	28,465	151,059	6.3	0.00	0.00	0.00	0.00	6.32	0.00	6.32	0.00
	182509	23,689	508,887	22.5	0.00	0.00	118.54	0.00	247.74	0.00	366.27	0.00
	182510	21,449	246,295	12.5	0.00	0.00	0.00	0.00	162.56	0.00	162.56	0.00
	182511	26,826	506,239	19.9	0.00	0.00	34.92	0.00	99.53	0.00	134.45	0.00
	182512	27,938	268,657	10.6	0.00	0.00	37.32	0.00	191.43	0.00	228.74	0.00
	182513	28,013	264,114	10.4	0.00	0.00	18.33	0.00	261.16	0.00	279.49	0.00
	182514	28,770	274,166	10.5	0.00	0.00	37.01	0.00	400.83	10.55	437.84	10.55
	182515	28,914	186,338	7.4	0.00	0.00	13.08	0.00	134.24	0.00	147.32	0.00
	182516	28,956	185,465	7.4	0.00	0.00	13.01	0.00	126.11	7.42	139.12	7.42
	182517	29,422	184,354	7.3	0.00	0.00	0.00	0.00	94.62	0.00	94.62	0.00
	182518	27,933	191,652	7.9	0.00	0.00	13.82	0.00	126.00	0.00	139.82	0.00
	Subtotal				0.00	0.00	298.40	0.00	1,956.28	25.02	2,254.68	25.02
1995	181658	24,689	208,476	9.4	0.00	17.04	0.00	0.00	75.69	85.15	75.69	102.19
	181659	26,388	209,831	9.0	0.00	32.30	31.47	15.73	107.61	44.84	139.08	92.87
	181660	26,620	211,977	9.0	0.00	0.00	15.75	47.25	107.75	107.75	123.50	155.00
	181661	26,120	121,352	5.6	15.53	10.19	19.85	19.84	39.59	5.66	74.97	35.68
	182016	25,543	104,936	5.1	0.00	0.00	8.98	8.98	112.58	61.41	121.56	70.38
	182017	25,494	24,736	2.0	5.42	10.66	0.00	13.85	15.79	21.71	21.21	46.22
	182018	25,587	108,783	5.3	0.00	0.00	9.23	18.46	42.09	99.95	51.32	118.41
	182019	25,561	243,362	10.5	28.94	18.98	18.49	36.97	31.62	10.54	79.05	66.50
	182020	26,187	188,677	8.2	0.00	0.00	0.00	14.42	147.95	82.19	147.95	96.61
	182021	26,084	191,498	8.3	0.00	0.00	14.66	73.29	108.63	225.62	123.29	298.91
	182022	25,392	507,932	21.0	57.78	37.90	36.91	0.00	84.16	84.16	178.86	122.06
	Subtotal				107.68	127.07	155.34	248.78	873.45	828.97	1,136.46	1,204.82
1994	020960	24,880	204,284	9.2	0.00	16.62	0.00	48.55	0.00	9.23	0.00	74.40
	020963	26,086	224,406	9.6	0.00	0.00	0.00	0.00	0.00	9.62	0.00	9.62
	181644	25,528	85,223	4.3	0.00	15.66	0.00	15.25	8.69	17.38	8.69	48.29
	181645	25,946	80,280	4.1	0.00	0.00	0.00	14.39	4.10	12.30	4.10	26.69
	181646	26,471	193,017	8.3	0.00	0.00	14.57	14.57	24.92	49.84	39.49	64.41
	181647	26,470	189,087	8.1	0.00	0.00	0.00	14.31	16.32	48.95	16.32	63.26

Appendix 13 - 99. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 1999. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1994	181648	26,529	184,863	8.0	0.00	0.00	0.00	0.00	23.95	55.88	23.95	55.88
Cont'd	181649	26,438	192,831	8.3	0.00	0.00	0.00	29.15	24.92	49.85	24.92	79.00
	181650	26,397	126,362	5.8	15.92	0.00	0.00	0.00	5.80	52.17	21.72	52.17
	181651	26,375	267,688	11.1	0.00	0.00	0.00	19.59	11.17	67.01	11.17	86.60
	181652	26,770	274,401	11.3	0.00	20.30	0.00	0.00	22.54	67.62	22.54	87.92
	Subtotal				15.92	52.57	14.57	155.81	142.41	439.85	172.90	648.23
1993	180629	26,632	115,968	5.4	0.00	0.00	0.00	0.00	0.00	5.36	0.00	5.36
	Subtotal				0.00	0.00	0.00	0.00	0.00	5.36	0.00	5.36
Total Quinsam H CWT					123.60	179.65	468.31	404.59	2,972.13	1,299.20	3,564.04	1,883.44
Strays												
1996	182535	24,004	520,455	22.7	0.00	40.92	0.00	0.00	0.00	0.00	0.00	40.92
	Subtotal				0.00	40.92	0.00	0.00	0.00	0.00	0.00	40.92
Total CWT					123.60	220.57	468.31	404.59	2,972.13	1,299.20	3,564.04	1,924.36

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied)

Appendix 13 - 00. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2000.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1997	183031	29,371	194,211	7.6	0.00	0.00	0.00	0.00	76.39	0.00	76.39	0.00
	183032	28,507	195,214	7.8	0.00	0.00	10.33	0.00	47.25	0.00	57.59	0.00
	183033	26,852	192,883	8.2	0.00	0.00	32.32	10.09	8.21	0.00	40.54	10.09
	183034	26,370	172,621	7.5	0.00	0.00	9.94	0.00	60.58	0.00	70.52	0.00
	183035	28,852	153,627	6.3	0.00	0.00	33.31	0.00	171.37	0.00	204.68	0.00
	183036	28,609	189,972	7.6	0.00	0.00	0.00	0.00	84.34	0.00	84.34	0.00
	183037	29,172	186,284	7.4	0.00	0.00	9.72	0.00	111.18	0.00	120.90	0.00
	183038	29,371	190,934	7.5	0.00	0.00	9.88	0.00	52.69	0.00	62.57	0.00
	183039	30,284	143,789	5.7	0.00	0.00	45.41	0.00	121.14	0.00	166.55	0.00
	183040	29,850	228,009	8.6	0.00	0.00	0.00	0.00	60.68	0.00	60.68	0.00
	183041	30,389	223,091	8.3	0.00	0.00	10.98	0.00	66.97	0.00	77.95	0.00
	183042	29,825	173,360	6.8	0.00	0.00	0.00	0.00	41.02	0.00	41.02	0.00
	Subtotal				0.00	0.00	161.90	10.09	901.83	0.00	1,063.72	10.09
1996	181830	29,220	176,418	7.0	0.00	0.00	27.80	43.39	77.69	28.25	105.49	71.64
	181831	28,465	151,059	6.3	0.00	0.00	0.00	15.56	6.33	0.00	6.33	15.56
	182509	23,689	508,887	22.5	0.00	69.94	59.20	194.08	67.68	135.37	126.89	399.39
	182510	21,449	246,295	12.5	22.93	0.00	49.31	61.58	12.53	0.00	84.76	61.58
	182511	26,826	506,239	19.9	0.00	0.00	26.16	73.52	59.82	39.88	85.99	113.40
	182512	27,938	268,657	10.6	0.00	0.00	55.91	157.11	74.58	95.88	130.49	252.99
	182513	28,013	264,114	10.4	19.15	0.00	68.65	192.91	136.05	167.44	223.85	360.35
	182514	28,770	274,166	10.5	0.00	0.00	69.32	64.93	126.80	105.67	196.12	170.60
	182515	28,914	186,338	7.4	13.67	0.00	49.01	119.35	59.77	97.12	122.45	216.47
	182516	28,956	185,465	7.4	0.00	0.00	78.00	127.85	200.64	89.18	278.65	217.03
	182517	29,422	184,354	7.3	0.00	11.30	47.83	89.60	94.79	94.79	142.62	195.70
	182518	27,933	191,652	7.9	0.00	0.00	72.45	106.64	86.78	86.78	159.23	193.42
	Subtotal				55.75	81.24	603.66	1,246.51	1,003.46	940.36	1,662.87	2,268.12
1995	181658	24,689	208,476	9.4	0.00	0.00	0.00	23.29	9.48	0.00	9.48	23.29
	181659	26,388	209,831	9.0	16.44	13.92	0.00	11.04	0.00	26.95	16.44	51.91
	181660	26,620	211,977	9.0	0.00	0.00	11.80	22.11	8.99	26.98	20.80	49.09
	181661	26,120	121,352	5.6	20.74	17.56	0.00	6.96	0.00	0.00	20.74	24.53
	182016	25,543	104,936	5.1	0.00	0.00	0.00	12.60	0.00	10.25	0.00	22.85

Appendix 13 - 00. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2000. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1995	182017	25,494	24,736	2.0	0.00	12.26	0.00	7.29	0.00	3.95	0.00	23.50
Cont'd	182018	25,587	108,783	5.3	0.00	0.00	0.00	12.95	5.27	26.35	5.27	39.30
	182019	25,561	243,362	10.5	0.00	0.00	13.85	0.00	0.00	0.00	13.85	0.00
	182020	26,187	188,677	8.2	0.00	0.00	0.00	20.24	8.23	0.00	8.23	20.24
	182021	26,084	191,498	8.3	0.00	12.98	0.00	0.00	8.37	50.23	8.37	63.20
	182022	25,392	507,932	21.0	0.00	0.00	27.66	0.00	0.00	0.00	27.66	0.00
	Subtotal				37.18	56.72	53.31	116.48	40.35	144.72	130.84	317.92
1994	181652	26,770	274,401	11.3	0.00	0.00	0.00	0.00	0.00	11.29	0.00	11.29
	Subtotal				0.00	0.00	0.00	0.00	0.00	11.29	0.00	11.29
Total Quinsam H CWT					92.93	137.97	818.86	1,373.08	1,945.63	1,096.37	2,857.43	2,607.42
Strays												
1997	183135	24,396	172,528	8.1	0.00	0.00	10.63	0.00	0.00	0.00	10.63	0.00
1996	630127	(e)			0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
	Subtotal				0.00	0.00	10.63	0.00	1.00	0.00	11.63	0.00
Total CWT					92.93	137.97	829.49	1,373.08	1,946.63	1,096.37	2,869.06	2,607.42

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied)

(e) U.S. facility tag code - stray contribution not expanded.

Appendix 13 - 01. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2001.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1998	183735	24,891	241,540	10.7	0.00	0.00	0.00	0.00	53.84	0.00	53.84	0.00
	183736	28,222	241,896	9.6	0.00	0.00	50.22	0.00	48.15	0.00	98.37	0.00
	183737	29,121	240,526	9.3	0.00	0.00	60.73	0.00	65.21	0.00	125.94	0.00
	183738	30,058	237,304	8.9	0.00	0.00	23.34	11.06	35.79	0.00	59.13	11.06
	183739	27,213	200,023	8.4	0.00	0.00	10.95	0.00	100.81	0.00	111.76	0.00
	183740	29,374	191,182	7.5	0.00	0.00	78.80	0.00	67.99	15.11	146.78	15.11
	183741	26,350	284,499	11.8	0.00	0.00	30.95	0.00	106.82	0.00	137.77	0.00
	183742	24,768	285,194	12.5	0.00	0.00	49.25	0.00	88.13	0.00	137.38	0.00
	183743	25,438	284,121	12.2	0.00	0.00	111.74	0.00	159.16	12.24	270.90	12.24
	183744	28,316	415,285	15.7	0.00	0.00	61.65	19.48	220.65	15.76	282.30	35.24
	183745	28,924	364,935	13.6	0.00	0.00	35.73	0.00	123.30	0.00	159.02	0.00
	183746	30,048	120,164	5.0	0.00	0.00	39.35	0.00	60.35	0.00	99.70	0.00
	Subtotal				0.00	0.00	552.71	30.54	1,130.19	43.11	1,682.90	73.65
1997	183031	29,371	194,211	7.6	32.46	0.00	119.83	151.42	22.98	22.98	175.26	174.40
	183032	28,507	195,214	7.8	0.00	13.95	10.29	58.54	86.85	7.90	97.14	80.39
	183033	26,852	192,883	8.2	0.00	0.00	21.47	50.87	41.16	8.23	62.63	59.10
	183034	26,370	172,621	7.5	16.09	0.00	89.09	46.91	68.33	15.18	173.50	62.09
	183035	28,852	153,627	6.3	0.00	11.25	91.26	180.85	127.26	95.44	218.52	287.54
	183036	28,609	189,972	7.6	0.00	0.00	150.34	151.98	192.16	76.87	342.50	228.84
	183037	29,172	186,284	7.4	15.75	13.13	213.15	128.55	163.47	74.30	392.36	215.99
	183038	29,371	190,934	7.5	31.98	0.00	118.07	139.88	181.11	52.82	331.16	192.70
	183039	30,284	143,789	5.7	12.25	10.22	82.94	171.51	208.18	121.44	303.38	303.17
	183040	29,850	228,009	8.6	0.00	0.00	169.98	53.70	156.43	69.53	326.41	123.22
	183041	30,389	223,091	8.3	0.00	0.00	32.83	114.07	193.01	58.74	225.83	172.81
	183042	29,825	173,360	6.8	0.00	0.00	80.43	84.70	102.81	82.25	183.24	166.94
	Subtotal				108.53	48.55	1,179.68	1,332.97	1,543.75	685.68	2,831.96	2,067.20
1996	181830	29,220	176,418	7.0	0.00	0.00	18.46	131.24	7.08	21.24	25.54	152.48
	181831	28,465	151,059	6.3	13.45	11.21	24.82	54.89	0.00	6.35	38.27	72.45
	182509	23,689	508,887	22.5	0.00	39.97	88.47	251.55	22.62	22.62	111.09	314.15
	182510	21,449	246,295	12.5	0.00	22.20	0.00	46.56	0.00	12.56	0.00	81.31
	182511	26,826	506,239	19.9	0.00	70.66	26.07	24.70	0.00	0.00	26.07	95.37

Appendix 13 - 01. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2001. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1996	182512	27,938	268,657	10.6	0.00	0.00	55.70	171.58	21.36	42.72	77.07	214.30
Cont'd	182513	28,013	264,114	10.4	0.00	0.00	41.04	207.44	10.49	115.41	51.53	322.84
	182514	28,770	274,166	10.5	22.45	18.72	13.81	183.27	31.78	105.93	68.04	307.93
	182515	28,914	186,338	7.4	15.87	0.00	9.77	101.81	37.45	74.90	63.09	176.71
	182516	28,956	185,465	7.4	0.00	13.17	19.43	128.89	7.45	44.70	26.88	186.75
	182517	29,422	184,354	7.3	0.00	0.00	19.06	90.33	7.31	73.10	26.37	163.43
	182518	27,933	191,652	7.9	16.76	0.00	72.18	87.96	7.91	47.45	96.85	135.41
	Subtotal				68.53	175.94	388.82	1,480.22	153.45	566.97	610.80	2,223.12
1995	182018	25,587	108,783	5.3	0.00	0.00	0.00	6.53	0.00	0.00	0.00	6.53
	182021	26,084	191,498	8.3	0.00	0.00	0.00	0.00	0.00	8.39	0.00	8.39
	Subtotal				0.00	0.00	0.00	6.53	0.00	8.39	0.00	14.92
Total Quinsam H CWT					177.06	224.49	2,121.21	2,850.26	2,827.39	1,304.15	5,125.65	4,378.89
Strays												
1997	182845	28,785	77,068	3.7	0.00	0.00	4.82	0.00	0.00	0.00	4.82	0.00
	183056	25,216	233,391	10.3	0.00	0.00	13.45	0.00	0.00	0.00	13.45	0.00
	Subtotal				0.00	0.00	18.28	0.00	0.00	0.00	18.28	0.00
Total CWT					177.06	224.49	2,139.49	2,850.26	2,827.39	1,304.15	5,143.93	4,378.89

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied)

Appendix 13 - 02. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2002.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1999	183247	25,193	444,955	18.7	0.00	0.00	0.00	0.00	56.30	0.00	56.30	0.00
	183248	28,001	225,888	9.1	0.00	0.00	63.78	0.00	18.24	0.00	82.01	0.00
	183249	23,748	178,604	8.5	0.00	0.00	47.95	0.00	34.27	0.00	82.22	0.00
	183250	27,706	161,517	6.8	0.00	0.00	19.22	8.91	27.47	0.00	46.69	8.91
	183251	27,461	443,031	17.1	25.89	0.00	48.20	0.00	86.15	0.00	160.24	0.00
	183252	29,258	456,088	16.6	0.00	0.00	116.68	0.00	133.45	0.00	250.13	0.00
	183253	27,462	209,387	8.6	0.00	0.00	0.00	0.00	52.04	0.00	52.04	0.00
	183254	26,627	202,694	8.6	0.00	0.00	48.46	0.00	8.66	0.00	57.12	0.00
	183255	27,425	314,037	12.5	0.00	0.00	17.52	0.00	50.08	0.00	67.60	0.00
	183256	28,476	308,404	11.8	0.00	0.00	16.64	0.00	47.59	0.00	64.23	0.00
	183257	27,667	295,952	11.7	0.00	0.00	16.45	0.00	47.05	0.00	63.51	0.00
	183258	29,102	55,094	2.9	0.00	0.00	0.00	0.00	2.91	0.00	2.91	0.00
	Subtotal				25.89	0.00	394.89	8.91	564.22	0.00	985.00	8.91
1998	183735	24,891	241,540	10.7	0.00	17.13	30.12	41.88	0.00	0.00	30.12	59.01
	183736	28,222	241,896	9.6	14.46	30.63	53.86	62.42	38.50	9.63	106.82	102.67
	183737	29,121	240,526	9.3	13.99	0.00	52.10	108.70	46.56	9.31	112.65	118.01
	183738	30,058	237,304	8.9	0.00	0.00	75.08	162.43	89.45	17.89	164.53	180.32
	183739	27,213	200,023	8.4	0.00	0.00	117.47	108.92	50.38	33.59	167.85	142.51
	183740	29,374	191,182	7.5	0.00	0.00	116.19	58.76	37.75	83.06	153.94	141.82
	183741	26,350	284,499	11.8	0.00	37.75	82.98	138.49	166.09	71.18	249.06	247.42
	183742	24,768	285,194	12.5	0.00	0.00	123.23	81.62	113.26	75.51	236.50	157.13
	183743	25,438	284,121	12.2	36.78	0.00	136.95	79.36	171.33	73.43	345.06	152.79
	183744	28,316	415,285	15.7	0.00	0.00	264.46	224.77	110.28	141.79	374.74	366.56
	183745	28,924	364,935	13.6	0.00	0.00	153.25	142.09	136.94	136.94	290.18	279.03
	183746	30,048	120,164	5.0	7.55	24.00	98.45	45.64	35.19	10.05	141.20	79.69
	Subtotal				72.79	109.50	1,304.13	1,255.09	995.73	662.37	2,372.65	2,026.96
1997	183031	29,371	194,211	7.6	0.00	36.54	10.71	59.57	0.00	7.66	10.71	103.77
	183032	28,507	195,214	7.8	0.00	12.56	11.04	20.47	0.00	0.00	11.04	33.03
	183033	26,852	192,883	8.2	0.00	0.00	11.51	53.37	0.00	0.00	11.51	53.37
	183034	26,370	172,621	7.5	0.00	0.00	0.00	98.43	0.00	0.00	0.00	98.43
	183035	28,852	153,627	6.3	9.56	10.12	0.00	164.99	12.72	69.96	22.28	245.07

Appendix 13 - 02. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2002. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1997	183036	28,609	189,972	7.6	0.00	0.00	42.99	189.35	7.68	46.10	50.68	235.45
Cont'd	183037	29,172	186,284	7.4	11.16	23.64	62.34	144.50	37.14	37.14	110.64	205.27
	183038	29,371	190,934	7.5	11.34	12.00	52.76	127.19	30.17	22.63	94.27	161.82
	183039	30,284	143,789	5.7	17.37	0.00	24.26	104.96	5.78	40.46	47.41	145.43
	183040	29,850	228,009	8.6	0.00	13.82	48.61	123.94	8.69	60.81	57.30	198.58
	183041	30,389	223,091	8.3	0.00	13.35	23.47	152.32	8.39	58.72	31.86	224.38
	183042	29,825	173,360	6.8	0.00	0.00	57.50	106.63	27.40	34.25	84.91	140.89
	Subtotal				49.43	122.02	345.19	1,345.73	137.97	377.73	532.59	1,845.48
1996	182512	27,938	268,657	10.6	0.00	0.00	0.00	0.00	0.00	10.68	0.00	10.68
	182514	28,770	274,166	10.5	0.00	0.00	14.81	0.00	0.00	0.00	14.81	0.00
	Subtotal				0.00	0.00	14.81	0.00	0.00	10.68	14.81	10.68
Total Quinsam H CWT					148.11	231.53	2,059.03	2,609.72	1,697.91	1,050.77	3,905.05	3,892.02
Strays												
1999	183838	30,745	71,557	3.3	0.00	0.00	4.68	0.00	0.00	0.00	4.68	0.00
	184132	26,012	739,300	29.4	0.00	0.00	0.00	0.00	29.59	0.00	29.59	0.00
1998	183821	31,776	421,140	14.3	0.00	0.00	20.05	0.00	0.00	0.00	20.05	0.00
	183826	27,926	71,980	3.6	0.00	5.72	0.00	0.00	0.00	0.00	0.00	5.72
	Subtotal				0.00	5.72	24.73	0.00	29.59	0.00	54.32	5.72
Total CWT					148.11	237.25	2,083.76	2,609.72	1,727.50	1,050.77	3,959.37	3,897.74

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied)

Appendix 13 - 03. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2003.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
2000	184452	29,743	183,283	7.2	0.00	0.00	24.63	0.00	14.32	0.00	38.95	0.00
	184453	30,201	187,374	7.2	0.00	0.00	12.39	0.00	28.82	0.00	41.20	0.00
	184454	28,411	179,436	7.3	11.49	0.00	37.73	0.00	7.32	0.00	56.54	0.00
	184455	29,481	190,281	7.5	0.00	0.00	0.00	0.00	14.91	0.00	14.91	0.00
	184456	30,460	284,798	10.3	0.00	0.00	17.79	0.00	62.10	0.00	79.89	0.00
	184457	30,661	288,023	10.4	0.00	0.00	0.00	0.00	72.76	0.00	72.76	0.00
	184458	29,895	286,674	10.6	0.00	0.00	18.21	0.00	63.54	0.00	81.74	0.00
	184459	26,292	157,567	7.0	0.00	0.00	12.02	0.00	20.98	0.00	33.00	0.00
	184460	29,092	358,509	13.3	0.00	0.00	0.00	0.00	26.65	0.00	26.65	0.00
	184461	25,364	163,960	7.5	0.00	0.00	0.00	0.00	7.46	0.00	7.46	0.00
	184462	27,283	352,288	13.9	21.85	0.00	0.00	0.00	27.82	0.00	49.67	0.00
	Subtotal				33.34	0.00	122.77	0.00	346.67	0.00	502.78	0.00
1999	183247	25,193	444,955	18.7	0.00	0.00	64.17	120.19	37.32	18.66	101.49	138.85
	183248	28,001	225,888	9.1	0.00	0.00	46.76	46.72	36.27	36.27	83.03	82.99
	183249	23,748	178,604	8.5	0.00	12.72	43.95	32.93	25.56	34.08	69.51	79.73
	183250	27,706	161,517	6.8	0.00	0.00	23.48	43.99	34.15	0.00	57.63	43.99
	183251	27,461	443,031	17.1	0.00	0.00	58.91	88.28	171.33	154.20	230.24	242.47
	183252	29,258	456,088	16.6	0.00	0.00	57.04	85.47	66.35	82.94	123.39	168.41
	183253	27,462	209,387	8.6	0.00	0.00	14.83	11.11	69.00	25.87	83.82	36.98
	183254	26,627	202,694	8.6	13.53	0.00	59.23	11.09	51.67	25.84	124.43	36.93
	183255	27,425	314,037	12.5	0.00	0.00	42.81	16.04	99.61	37.35	142.42	53.39
	183256	28,476	308,404	11.8	0.00	0.00	20.34	15.24	153.79	35.49	174.13	50.73
	183257	27,667	295,952	11.7	0.00	0.00	60.33	30.13	93.58	11.70	153.90	41.83
	183258	29,102	55,094	2.9	0.00	0.00	4.97	0.00	14.47	0.00	19.44	0.00
	Subtotal				13.53	12.72	496.82	501.18	853.10	462.40	1,363.44	976.30
1998	183735	24,891	241,540	10.7	0.00	0.00	0.00	0.00	0.00	10.70	0.00	10.70
	183736	28,222	241,896	9.6	15.03	0.00	0.00	36.99	0.00	0.00	15.03	36.99
	183737	29,121	240,526	9.3	14.54	13.82	0.00	11.93	9.26	0.00	23.80	25.75
	183738	30,058	237,304	8.9	0.00	0.00	30.58	34.37	8.89	8.89	39.48	43.27
	183739	27,213	200,023	8.4	0.00	0.00	14.36	10.76	8.35	16.70	22.71	27.46
	183740	29,374	191,182	7.5	11.79	11.21	0.00	9.67	7.51	15.02	19.30	35.90

Appendix 13 - 03. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2003. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1998	183741	26,350	284,499	11.8	0.00	0.00	20.28	60.78	23.59	47.19	43.88	107.97
Cont'd	183742	24,768	285,194	12.5	0.00	0.00	43.03	64.48	12.51	12.51	55.55	76.99
	183743	25,438	284,121	12.2	0.00	18.17	62.76	62.70	0.00	36.51	62.76	117.37
	183744	28,316	415,285	15.7	0.00	0.00	80.80	40.36	15.67	62.66	96.47	103.02
	183745	28,924	364,935	13.6	0.00	0.00	23.41	35.08	27.23	122.55	50.64	157.63
	183746	30,048	120,164	5.0	0.00	0.00	0.00	19.32	5.00	20.00	5.00	39.31
	Subtotal				41.37	43.20	275.23	386.43	118.02	352.74	434.61	782.37
1997	183039	30,284	143,789	5.7	0.00	0.00	0.00	14.81	0.00	0.00	0.00	14.81
	183040	29,850	228,009	8.6	0.00	0.00	14.85	0.00	0.00	0.00	14.85	0.00
	Subtotal				0.00	0.00	14.85	14.81	0.00	0.00	14.85	14.81
Total Quinsam H CWT					88.23	55.92	909.66	902.42	1,317.79	815.15	2,315.69	1,773.48
Total CWT					88.23	55.92	909.66	902.42	1,317.79	815.15	2,315.69	1,773.48

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied)

Appendix 13 - 04. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2004.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
2001	184732	24,715	164,246	7.6	0.00	0.00	30.16	0.00	68.96	0.00	99.12	0.00
	184733	28,131	161,306	6.7	0.00	0.00	0.00	0.00	40.49	0.00	40.49	0.00
	184734	30,964	185,363	7.0	0.00	0.00	41.34	11.36	42.01	7.00	83.35	18.36
	184735	29,689	177,884	7.0	19.91	0.00	27.58	0.00	35.03	0.00	82.52	0.00
	184736	30,285	287,709	10.5	29.90	0.00	20.71	0.00	94.71	0.00	145.32	0.00
	184737	29,922	289,878	10.7	0.00	0.00	63.25	0.00	117.82	0.00	181.07	0.00
	184738	31,508	282,911	10.0	0.00	0.00	19.68	0.00	90.01	0.00	109.69	0.00
	184739	31,732	366,526	12.6	0.00	0.00	49.52	0.00	113.20	0.00	162.72	0.00
	184740	31,330	167,549	6.3	0.00	0.00	0.00	0.00	31.81	0.00	31.81	0.00
	184741	31,520	173,139	6.5	0.00	0.00	12.81	0.00	39.04	0.00	51.85	0.00
	184742	32,137	371,346	12.6	0.00	0.00	0.00	0.00	75.49	0.00	75.49	0.00
	184743	32,793	183,744	6.6	0.00	0.00	0.00	0.00	19.85	0.00	19.85	0.00
	Subtotal				49.81	0.00	265.06	11.36	768.43	7.00	1,083.29	18.36
2000	184452	29,743	183,283	7.2	40.79	0.00	42.39	23.29	57.42	50.24	140.59	73.53
	184453	30,201	187,374	7.2	0.00	0.00	113.69	70.27	50.54	36.10	164.23	106.37
	184454	28,411	179,436	7.3	0.00	0.00	14.43	23.79	7.33	14.66	21.76	38.45
	184455	29,481	190,281	7.5	21.23	14.97	44.11	72.71	7.47	0.00	72.81	87.68
	184456	30,460	284,798	10.3	29.47	0.00	40.83	50.48	103.72	62.23	174.03	112.71
	184457	30,661	288,023	10.4	0.00	0.00	41.01	50.69	135.41	72.91	176.42	123.60
	184458	29,895	286,674	10.6	0.00	0.00	83.56	68.86	84.90	84.90	168.45	153.76
	184459	26,292	157,567	7.0	19.91	0.00	27.59	22.74	49.06	21.02	96.56	43.76
	184460	29,092	358,509	13.3	0.00	0.00	105.13	43.32	106.82	80.11	211.94	123.43
	184461	25,364	163,960	7.5	0.00	0.00	73.62	48.54	74.80	37.40	148.43	85.94
	184462	27,283	352,288	13.9	39.61	55.87	0.00	45.23	153.37	69.71	192.98	170.82
	184463	30,451	156,996	6.2	0.00	0.00	0.00	0.00	30.85	0.00	30.85	0.00
	Subtotal				151.01	70.84	586.35	519.90	861.69	529.31	1,599.05	1,120.05
1999	183247	25,193	444,955	18.7	53.14	37.47	73.63	91.01	0.00	37.40	126.76	165.89
	183248	28,001	225,888	9.1	0.00	18.21	0.00	73.70	0.00	9.09	0.00	100.99
	183249	23,748	178,604	8.5	0.00	34.22	0.00	13.85	25.62	8.54	25.62	56.61
	183250	27,706	161,517	6.8	0.00	41.14	0.00	22.21	6.84	6.84	6.84	70.19
	183251	27,461	443,031	17.1	0.00	0.00	67.59	0.00	34.34	85.85	101.93	85.85

Appendix 13 - 04. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2004. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
1999	183252	29,258	456,088	16.6	0.00	0.00	32.72	161.80	49.87	149.62	82.60	311.42
Cont'd	183253	27,462	209,387	8.6	0.00	0.00	0.00	98.14	25.93	25.93	25.93	124.07
	183254	26,627	202,694	8.6	24.52	0.00	16.99	0.00	17.26	8.63	58.77	8.63
	183255	27,425	314,037	12.5	0.00	0.00	24.56	40.48	0.00	62.39	24.56	102.87
	183256	28,476	308,404	11.8	0.00	23.76	23.34	96.16	11.86	47.42	35.19	167.34
	183257	27,667	295,952	11.7	0.00	0.00	23.07	38.03	82.06	82.06	105.13	120.09
	183258	29,102	55,094	2.9	8.24	0.00	17.12	14.11	8.70	14.50	34.06	28.61
	Subtotal				85.90	154.80	279.02	649.49	262.48	538.27	627.40	1,342.57
1998	183739	27,213	200,023	8.4	0.00	0.00	0.00	13.57	0.00	0.00	0.00	13.57
	Subtotal				0.00	0.00	0.00	13.57	0.00	0.00	0.00	13.57
Total Quinsam H CWT					286.71	225.65	1,130.44	1,194.32	1,892.59	1,074.58	3,309.74	2,494.55
Strays												
2001	184628	25,119	26,389	2.1	0.00	0.00	4.04	0.00	0.00	0.00	4.04	0.00
	184641	25,255	225,799	9.9	0.00	0.00	0.00	16.16	0.00	0.00	0.00	16.16
	631375	(e)			0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
	631405	(e)			0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
	636322	(e)			0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
2000	093256	(e)			0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00
	184556	28,235	888,660	32.5	0.00	0.00	0.00	52.79	0.00	0.00	0.00	52.79
	Subtotal				0.00	0.00	5.04	68.95	3.00	0.00	8.04	68.95
Total CWT					286.71	225.65	1,135.48	1,263.27	1,895.59	1,074.58	3,317.78	2,563.50

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied)

(e) U.S. facility tag code - stray contribution not expanded.

Appendix 13 - 05. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2005.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
2002	185115	30,116	401,485	14.3	0.00	0.00	0.00	0.00	85.99	0.00	85.99	0.00
	185116	25,939	189,959	8.3	0.00	0.00	31.38	0.00	33.29	0.00	64.67	0.00
	185117	27,017	181,218	7.7	0.00	0.00	0.00	0.00	53.95	0.00	53.95	0.00
	185118	27,651	151,609	6.5	0.00	0.00	0.00	0.00	19.45	0.00	19.45	0.00
	185119	29,510	283,479	10.6	0.00	0.00	0.00	0.00	31.82	0.00	31.82	0.00
	185120	29,211	281,587	10.6	0.00	0.00	0.00	16.66	85.12	10.64	85.12	27.30
	185121	28,165	284,739	11.1	0.00	0.00	0.00	0.00	55.55	0.00	55.55	0.00
	185122	31,003	373,390	13.0	0.00	0.00	0.00	0.00	78.26	0.00	78.26	0.00
	185123	31,446	367,264	12.7	0.00	0.00	0.00	0.00	63.40	12.68	63.40	12.68
	185124	29,480	165,497	6.6	0.00	0.00	0.00	0.00	92.59	0.00	92.59	0.00
	185125	31,631	163,862	6.2	0.00	0.00	0.00	0.00	80.35	0.00	80.35	0.00
	185126	30,976	187,053	7.0	0.00	0.00	13.27	0.00	14.08	0.00	27.34	0.00
	Subtotal				0.00	0.00	44.65	16.66	693.84	23.32	738.49	39.98
2001	184732	24,715	164,246	7.6	0.00	0.00	72.06	59.85	61.16	30.58	133.22	90.43
	184733	28,131	161,306	6.7	0.00	12.25	12.69	31.63	47.14	33.67	59.83	77.55
	184734	30,964	185,363	7.0	14.56	0.00	26.34	54.69	27.95	6.99	68.84	61.68
	184735	29,689	177,884	7.0	14.57	0.00	26.36	21.89	69.92	13.98	110.84	35.88
	184736	30,285	287,709	10.5	0.00	0.00	79.17	32.88	105.00	63.00	184.17	95.88
	184737	29,922	289,878	10.7	0.00	0.00	161.17	83.67	149.63	106.88	310.80	190.54
	184738	31,508	282,911	10.0	0.00	0.00	150.48	46.87	159.66	89.81	310.14	136.68
	184739	31,732	366,526	12.6	0.00	0.00	70.97	98.25	125.51	62.75	196.48	161.00
	184740	31,330	167,549	6.3	0.00	0.00	23.93	0.00	95.22	69.83	119.15	69.83
	184741	31,520	173,139	6.5	0.00	0.00	48.96	0.00	51.94	84.41	100.90	84.41
	184742	32,137	371,346	12.6	0.00	0.00	0.00	39.31	213.44	138.11	213.44	177.42
	184743	32,793	183,744	6.6	0.00	0.00	12.45	0.00	72.63	13.21	85.08	13.21
	Subtotal				29.12	12.25	684.57	469.04	1,179.20	713.21	1,892.88	1,194.51
2000	184452	29,743	183,283	7.2	0.00	0.00	0.00	11.21	7.16	7.16	7.16	18.38
	184453	30,201	187,374	7.2	0.00	0.00	0.00	11.28	0.00	0.00	0.00	11.28
	184455	29,481	190,281	7.5	0.00	0.00	14.05	23.34	0.00	0.00	14.05	23.34
	184456	30,460	284,798	10.3	0.00	0.00	0.00	48.61	20.70	41.40	20.70	90.01
	184457	30,661	288,023	10.4	0.00	0.00	0.00	16.27	0.00	51.97	0.00	68.24

Appendix 13 - 05. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2005. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
2000	184458	29,895	286,674	10.6	0.00	0.00	19.96	33.16	10.59	21.18	30.55	54.34
Cont'd	184459	26,292	157,567	7.0	0.00	0.00	13.18	10.95	13.99	20.98	27.17	31.93
	184460	29,092	358,509	13.3	0.00	48.48	0.00	62.58	0.00	39.97	0.00	151.03
	184461	25,364	163,960	7.5	0.00	0.00	28.14	11.69	7.46	22.39	35.60	34.08
	184462	27,283	352,288	13.9	0.00	0.00	26.22	21.78	27.82	41.74	54.05	63.52
	184463	30,451	156,996	6.2	0.00	0.00	0.00	48.19	0.00	24.62	0.00	72.81
	Subtotal				0.00	48.48	101.56	299.06	87.73	271.41	189.28	618.96
1999	183248	28,001	225,888	9.1	0.00	0.00	17.09	0.00	9.07	0.00	26.16	0.00
	183254	26,627	202,694	8.6	0.00	0.00	0.00	0.00	0.00	8.61	0.00	8.61
	183258	29,102	55,094	2.9	0.00	0.00	0.00	0.00	0.00	2.89	0.00	2.89
	Subtotal				0.00	0.00	17.09	0.00	9.07	11.51	26.16	11.51
Total Quinsam H CWT					29.12	60.74	847.86	784.76	1,969.83	1,019.45	2,846.81	1,864.94
Strays												
2001	184762	28,156	1,793,531	64.7	0.00	0.00	0.00	0.00	0.00	64.70 (e)	0.00	64.70
2000	184843	29,970	137,505	5.6	0.00	0.00	0.00	0.00	5.59	0.00	5.59	0.00
	Subtotal				0.00	0.00	0.00	0.00	5.59	64.70	5.59	64.70
Total CWT					29.12	60.74	847.86	784.76	1,975.42	1,084.15	2,852.40	1,929.64

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied)

(e) This expansion may be an overestimate of stray contribution.

Appendix 13 - 06. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2006.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
2003	182548	25,434	258,978	11.2	0.00	0.00	0.00	0.00	134.74	0.00	134.74	0.00
	182549	29,181	255,072	9.7	0.00	0.00	0.00	35.22	117.37	9.78	117.37	45.00
	184809	29,463	374,659	13.7	0.00	0.00	57.57	0.00	55.09	13.77	112.66	13.77
	184810	30,018	180,996	7.0	0.00	0.00	14.75	0.00	56.47	14.12	71.22	14.12
	184811	26,425	179,251	7.8	13.04	0.00	0.00	28.14	70.34	0.00	83.38	28.14
	184812	29,428	372,155	13.6	22.86	0.00	57.27	0.00	123.32	0.00	203.46	0.00
	184813	25,630	267,080	11.4	19.13	0.00	0.00	0.00	172.01	11.47	191.15	11.47
	185003	26,295	405,551	16.4	27.52	0.00	0.00	0.00	98.94	0.00	126.46	0.00
	185004	27,313	192,500	8.0	13.48	0.00	0.00	0.00	16.16	0.00	29.65	0.00
	185005	29,648	197,311	7.7	0.00	0.00	32.13	0.00	38.43	0.00	70.56	0.00
	185006	29,948	150,012	6.0	0.00	0.00	0.00	0.00	60.34	6.03	60.34	6.03
	185417	31,263	188,170	7.0	0.00	0.00	0.00	0.00	14.10	0.00	14.10	0.00
	Subtotal				96.04	0.00	161.72	63.37	957.30	55.17	1,215.06	118.54
2002	185115	30,116	401,485	14.3	24.01	0.00	90.22	25.91	71.95	14.39	186.18	40.30
	185116	25,939	189,959	8.3	0.00	0.00	34.93	0.00	8.36	8.36	43.29	8.36
	185117	27,017	181,218	7.7	12.91	13.83	64.70	97.54	23.22	38.70	100.83	150.07
	185118	27,651	151,609	6.5	0.00	0.00	0.00	23.44	0.00	6.51	0.00	29.95
	185119	29,510	283,479	10.6	0.00	19.04	0.00	95.88	53.25	85.20	53.25	200.11
	185120	29,211	281,587	10.6	17.83	0.00	44.65	173.13	96.15	106.83	158.63	279.96
	185121	28,165	284,739	11.1	0.00	39.88	23.31	20.09	111.55	100.40	134.87	160.36
	185122	31,003	373,390	13.0	43.71	23.41	27.37	165.08	78.58	78.58	149.66	267.07
	185123	31,446	367,264	12.7	21.24	0.00	0.00	114.62	140.04	38.19	161.29	152.81
	185124	29,480	165,497	6.6	0.00	23.74	0.00	23.92	39.85	53.13	39.85	100.78
	185125	31,631	163,862	6.2	0.00	0.00	64.85	67.04	68.26	55.85	133.11	122.90
	185126	30,976	187,053	7.0	0.00	0.00	44.31	38.18	84.81	42.40	129.12	80.58
	Subtotal				119.70	119.90	394.35	844.82	776.02	628.54	1,290.07	1,593.26
2001	184732	24,715	164,246	7.6	0.00	0.00	16.04	27.65	7.68	7.68	23.72	35.32
	184733	28,131	161,306	6.7	11.28	0.00	14.13	60.87	0.00	6.76	25.41	67.64
	184734	30,964	185,363	7.0	0.00	0.00	0.00	0.00	0.00	14.03	0.00	14.03
	184735	29,689	177,884	7.0	0.00	12.55	14.67	12.64	0.00	7.02	14.67	32.21
	184736	30,285	287,709	10.5	0.00	0.00	88.14	132.89	21.09	42.17	109.22	175.06

Appendix 13 - 06. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2006. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
2001	184737	29,922	289,878	10.7	0.00	0.00	0.00	19.32	32.19	53.66	32.19	72.98
Cont'd	184738	31,508	282,911	10.0	0.00	0.00	20.94	72.17	30.06	60.12	51.00	132.29
	184739	31,732	366,526	12.6	0.00	22.53	52.67	113.46	25.20	75.61	77.88	211.59
	184740	31,330	167,549	6.3	0.00	0.00	13.32	68.86	12.75	38.24	26.07	107.10
	184741	31,520	173,139	6.5	0.00	0.00	13.63	82.17	26.08	32.60	39.70	114.77
	184742	32,137	371,346	12.6	0.00	0.00	79.04	204.29	12.61	50.43	91.65	254.72
	184743	32,793	183,744	6.6	0.00	0.00	0.00	23.88	66.30	46.41	66.30	70.29
	Subtotal				11.28	35.07	312.59	818.19	233.96	434.73	557.82	1,288.00
Total Quinsam H CWT					227.03	154.98	868.65	1,726.38	1,967.28	1,118.44	3,062.96	2,999.80
Strays												
2002	185150	27,183	689,834	26.4	0.00	0.00	0.00	0.00	26.49	0.00	26.49	0.00
	Subtotal				0.00	0.00	0.00	0.00	26.49	0.00	26.49	0.00
Total CWT					227.03	154.98	868.65	1,726.38	1,993.77	1,118.44	3,089.45	2,999.80

(a) Abbreviations are: M = Male, F= Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied)

Appendix 13 - 07. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2007.

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
2004	182550	29,853	375,134	13.6	0.00	0.00	0.00	0.00	41.44	0.00	41.44	0.00
	182818	28,660	178,260	7.2	0.00	0.00	0.00	0.00	22.05	0.00	22.05	0.00
	182819	29,292	174,222	6.9	0.00	0.00	0.00	0.00	49.52	0.00	49.52	0.00
	182820	28,951	179,712	7.2	0.00	0.00	0.00	0.00	14.68	0.00	14.68	0.00
	183605	11,221	176,994	16.8	0.00	0.00	0.00	0.00	34.16	0.00	34.16	0.00
	184814	28,443	170,706	7.0	0.00	0.00	14.53	0.00	57.03	7.13	71.56	7.13
	184815	30,644	171,865	6.6	0.00	0.00	0.00	0.00	40.37	0.00	40.37	0.00
	184816	27,542	171,045	7.2	0.00	0.00	0.00	0.00	14.68	7.34	14.68	7.34
	184817	30,952	273,813	9.8	0.00	0.00	0.00	0.00	10.02	0.00	10.02	0.00
	184818	29,965	271,086	10.0	0.00	0.00	0.00	0.00	61.37	0.00	61.37	0.00
	185020	30,463	275,263	10.0	0.00	0.00	0.00	0.00	61.31	0.00	61.31	0.00
	185025	30,572	176,931	6.8	0.00	0.00	0.00	0.00	55.28	0.00	55.28	0.00
	Subtotal				0.00	0.00	14.53	0.00	461.90	14.47	476.44	14.47
2003	182548	25,434	258,978	11.2	0.00	0.00	23.21	0.00	193.55	125.24	216.76	125.24
	182549	29,181	255,072	9.7	0.00	17.74	20.22	17.44	158.68	148.76	178.90	183.95
	184809	29,463	374,659	13.7	0.00	0.00	56.94	24.56	125.68	97.75	182.63	122.31
	184810	30,018	180,996	7.0	0.00	0.00	29.18	25.17	93.04	57.26	122 23	82.43
	184811	26,425	179,251	7.8	0.00	0.00	0.00	27.87	79.24	95.09	79.24	122.96
	184812	29,428	372,155	13.6	0.00	0.00	28.33	0.00	236.19	111.15	264.52	111.15
	184813	25,630	267,080	11.4	0.00	0.00	0.00	20.45	174.41	104.65	174.41	125.10
	185003	26,295	405,551	16.4	31.98	0.00	34.09	58.81	150.49	117.05	216.56	175.85
	185004	27,313	192,500	8.0	15.67	0.00	33.41	28.82	65.55	24.58	114.64	53.40
	185005	29,648	197,311	7.7	44.72	0.00	31.78	27.41	46.76	38.97	123.27	66.38
	185006	29,948	150,012	6.0	0.00	0.00	24.95	21.52	36.71	24.47	61.66	45.99
	185417	31,263	188,170	7.0	0.00	0.00	0.00	12.57	42.88	50.02	42.88	62.59
	Subtotal				92.38	17.74	282.12	264.61	1,403.19	994.99	1,777.69	1,277.35
2002	185115	30,116	401,485	14.3	0.00	0.00	0.00	25.66	0.00	0.00	0.00	25.66
	185116	25,939	189,959	8.3	0.00	0.00	0.00	0.00	8.47	0.00	8.47	0.00
	185119	29,510	283,479	10.6	0.00	0.00	22.02	37.98	0.00	53.99	22.02	91.97
	185120	29,211	281,587	10.6	0.00	0.00	0.00	0.00	0.00	10.83	0.00	10.83
	185121	28,165	284,739	11.1	0.00	0.00	0.00	0.00	0.00	22.62	0.00	22.62

Appendix 13 - 07. Estimates of the total escapement of hatchery-reared CWT Chinook salmon returning to the Campbell River, Quinsam River, and Quinsam Hatchery, by tag code, 2007. Cont'd

Brood Year	CWT Release Group	Release Numbers		Expansion Factor (c)	Expanded Hatchery Contributions (a, b)							
					Campbell River		Quinsam River		Quinsam Hatchery		Total	
		CWT	Untagged (d)		M	F	M	F	M	F	M	F
2002	185122	31,003	373,390	13.0	0.00	0.00	0.00	0.00	13.28	66.40	13.28	66.40
Cont'd	185123	31,446	367,264	12.7	0.00	0.00	0.00	22.70	0.00	12.91	0.00	35.61
	185124	29,480	165,497	6.6	0.00	12.05	0.00	47.37	6.73	13.47	6.73	72.88
	185125	31,631	163,862	6.2	0.00	0.00	0.00	11.07	6.29	12.58	6.29	23.65
	185126	30,976	187,053	7.0	0.00	0.00	0.00	0.00	7.17	7.17	7.17	7.17
	Subtotal				0.00	12.05	22.02	144.77	41.95	199.98	63.96	356.79
2001	184736	30,285	287,709	10.5	0.00	0.00	0.00	18.80	0.00	0.00	0.00	18.80
	184737	29,922	289,878	10.7	0.00	0.00	0.00	0.00	0.00	10.88	0.00	10.88
	184738	31,508	282,911	10.0	0.00	0.00	0.00	17.87	0.00	0.00	0.00	17.87
	184741	31,520	173,139	6.5	0.00	0.00	0.00	0.00	0.00	6.61	0.00	6.61
	184742	32,137	371,346	12.6	0.00	0.00	0.00	0.00	12.78	0.00	12.78	0.00
	Subtotal				0.00	0.00	0.00	36.67	12.78	17.49	12.78	54.16
Total Quinsam H CWT					92.38	29.79	318.67	446.04	1,919.82	1,226.93	2,330.88	1,702.77
Strays												
2004	183718	20,162	110,869	6.5	12.66	0.00	0.00	0.00	0.00	0.00	12.66	0.00
2003	185731	33,165	1,175,600	36.4	0.00	132.79	0.00	0.00	0.00	0.00	0.00	132.79
2002	185336	29,958	908,351	31.3	0.00	0.00	0.00	56.08	0.00	0.00	0.00	56.08
	Subtotal				12.66	132.79	0.00	56.08	0.00	0.00	12.66	188.86
Total CWT					105.03	162.58	318.67	502.12	1,919.82	1,226.93	2,343.53	1,891.63

(a) Abbreviations are: M = Male, F = Female

(b) Does not include jacks.

(c) The expansion factor is used to expand the estimated number of CWT chinook in the escapement (from Appendix 12) to account for the unmarked hatchery releases and hence, derive hatchery contributions to escapement; Expansion Factor = (CWT releases + Untagged releases)/CWT releases.

(d) Untagged = Adipose finclip only (ie. tag shed) + Unmarked (ie. no CWT/adipose finclip applied).

Appendix 14 - 99. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 1999.

				Hatchery Contribution (b)				Stray Contribution (b)				
		Estimated Escapement (a)		Male (c)		Female		Male (c)		Female		
Location	Age	Male (c)	Female	Number	%	Number	%	Number	%	Number	%	
Campbell River												
	3	131	15	0	0.0	0	0.0	0	0.0	41	269.9	(d)
	4	317	288	108	33.9	127	44.1	0	0.0	0	0.0	
	5	90	344	16	17.7	53	15.3	0	0.0	0	0.0	
	6	14	5	0	0.0	0	0.0	0	0.0	0	0.0	
	Total	552	652	124	22.4	180	27.6	0	0.0	41	6.3	
Quinsam River												
	3	419	59	298	71.2	0	0.0	0	0.0	0	0.0	
	4	473	615	155	32.8	249	40.4	0	0.0	0	0.0	
	5	101	289	15	14.4	156	53.9	0	0.0	0	0.0	
	6	0	0	0	0.0	0	0.0	0	0.0	0	0.0	
	Total	993	963	468	47.2	405	42.0	0	0.0	0	0.0	
Quinsam Hatchery (e)												
Brood stock:		2,338	911									
Above Counting Fence:		857	577									
Elk Falls Chan.:		208	204									
	Total	3,403	1,692	2,972	87.3	1,299	76.8	0	0.0	0	0.0	

(a) From Appendix 9 & 4.
(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).
(c) Does not include jacks.
(d) Estimated contribution greater than 100%.
(e) CWT fish were removed from transfers above counting fence or to Elk Falls Channel. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.
(f) Slight differences in calculations are due to rounding.

Appendix 14 - 00. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 2000.

		Estimated Escapement (a)		Hatchery Contribution (b)					Stray Contribution (b)			
				Male (c)		Female			Male (c)		Female	
Location	Age	Male (c)	Female	Number	%	Number	%		Number	%	Number	%
Campbell River												
	3	56	0	0	0.0	0	0.0		0	0.0	0	0.0
	4	265	262	56	21.0	81	31.0		0	0.0	0	0.0
	5	60	136	37	62.3	57	41.7		0	0.0	0	0.0
	6	7	5	0	0.0	0	0.0		0	0.0	0	0.0
	Total	388	403	93	24.0	138	34.2		0	0.0	0	0.0
Quinsam River												
	3	353	8	162	45.8	10	131.4	(d)	11	3.0	0	0.0
	4	1,319	1,782	604	45.8	1,247	69.9		0	0.0	0	0.0
	5	83	253	53	64.1	116	46.0		0	0.0	0	0.0
	6	10	8	0	0.0	0	0.0		0	0.0	0	0.0
	Total	1,766	2,051	819	46.4	1,373	66.9		11	0.6	0	0.0
Quinsam Hatchery (e)												
Brood stock:		1,534	828									
Above Counting Fence:		539	401									
Elk Falls Chan.:		150	150									
	Total	2,223	1,379	1,946	87.5	1,096	79.5		1	0.0	0	0.0

(a) From Appendix 9 & 4.
(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).
(c) Does not include jacks.
(d) Estimated contribution greater than 100%.
(e) CWT fish were removed from transfers above counting fence or to Elk Falls Channel. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.
(f) Slight differences in calculations are due to rounding.

Appendix 14 - 01. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 2001.

		Estimated Escapement (a)		Hatchery Contribution (b)					Stray Contribution (b)			
				Male (c)		Female			Male (c)		Female	
Location	Age	Male (c)	Female	Number	%	Number	%		Number	%	Number	%
Campbell River												
	3	53	0	0	0.0	0	0.0		0	0.0	0	0.0
	4	266	160	109	40.8	49	30.3		0	0.0	0	0.0
	5	179	269	69	38.3	176	65.5		0	0.0	0	0.0
	6	0	4	0	0.0	0	0.0		0	0.0	0	0.0
	Total	498	433	177	35.6	224	51.8		0	0.0	0	0.0
Quinsam River												
	3	754	27	553	73.3	31	114.4	(d)	0	0.0	0	0.0
	4	2,793	1,905	1,180	42.2	1,333	70.0		18	0.7	0	0.0
	5	572	1,834	389	67.9	1,480	80.7		0	0.0	0	0.0
	6	0	9	0	0.0	7	73.4		0	0.0	0	0.0
	Total	4,119	3,774	2,121	51.5	2,850	75.5		18	0.4	0	0.0
Quinsam Hatchery (e)												
Brood stock:		1,902	902									
Above Counting Fence:		1,198	686									
Elk Falls Chan.:		220	183									
	Total	3,320	1,771	2,827	85.2	1,304	73.6		0	0.0	0	0.0

(a) From Appendix 9 & 4.

(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).

(c) Does not include jacks.

(d) Estimated contribution greater than 100%.

(e) CWT fish were removed from transfers above counting fence or to Elk Falls Channel. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.

(f) Slight differences in calculations are due to rounding.

Appendix 14 - 02. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 2002.

				Hatchery Contribution (b)					Stray Contribution (b)			
		Estimated Escapement (a)		Male (c)		Female			Male (c)		Female	
Location	Age	Male (c)	Female	Number	%	Number	%		Number	%	Number	%
Campbell River												
	3	29	0	26	89.0	0	0.0		0	0.0	0	0.0
	4	268	234	73	27.2	110	46.8		0	0.0	6	2.4
	5	239	463	49	20.7	122	26.4		0	0.0	0	0.0
	6	6	19	0	0.0	0	0.0		0	0.0	0	0.0
	Total	541	716	148	27.4	232	32.3		0	0.0	6	0.8
Quinsam River												
	3	454	24	395	86.9	9	37.0		5	1.0	0	0.0
	4	1,934	1,854	1,304	67.4	1,255	67.7		20	1.0	0	0.0
	5	857	2,746	345	40.3	1,346	49.0		0	0.0	0	0.0
	6	13	0	15	114.1	0	0.0	(d)	0	0.0	0	0.0
	Total	3,258	4,624	2,059	63.2	2,610	56.4		25	0.8	0	0.0
Quinsam Hatchery (e)												
Brood stock:		1,186	772									
Above Counting Fence:		893	593									
Elk Falls Chan.:		78	86									
	Total	2,157	1,451	1,698	78.7	1,051	72.4		30	1.4	0	0.0

(a) From Appendix 9 & 4.

(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).

(c) Does not include jacks.

(d) Estimated contribution greater than 100%.

(e) CWT fish were removed from transfers above counting fence or to Elk Falls Channel. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.

(f) Slight differences in calculations are due to rounding.

Appendix 14 - 03. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 2003.

		Estimated Escapement (a)		Hatchery Contribution (b)					Stray Contribution (b)			
				Male (c)		Female			Male (c)		Female	
Location	Age	Male (c)	Female	Number	%	Number	%		Number	%	Number	%
Campbell River												
	3	27	0	33	123.7	0	0.0	(d)	0	0.0	0	0.0
	4	139	102	14	9.7	13	12.4		0	0.0	0	0.0
	5	90	191	41	46.1	43	22.6		0	0.0	0	0.0
	6	0	19	0	0.0	0	0.0		0	0.0	0	0.0
	Total	256	312	88	34.5	56	17.9		0	0.0	0	0.0
Quinsam River												
	3	347	19	123	35.4	0	0.0		0	0.0	0	0.0
	4	1,137	954	497	43.7	501	52.5		0	0.0	0	0.0
	5	485	936	275	56.7	386	41.3		0	0.0	0	0.0
	6	28	28	15	53.6	15	53.3		0	0.0	0	0.0
	Total	1,996	1,936	910	45.6	902	46.6		0	0.0	0	0.0
Quinsam Hatchery (e)												
Brood stock:		1,220	825									
Above Counting Fence:		234	65									
Elk Falls Chan.:		50	45									
	Total	1,504	935	1,318	87.6	815	87.2		0	0.0	0	0.0

(a) From Appendix 9 & 4.
(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).
(c) Does not include jacks.
(d) Estimated contribution greater than 100%.
(e) CWT fish were removed from transfers above counting fence or to Elk Falls Channel. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.
(f) Slight differences in calculations are due to rounding.

Appendix 14 - 04. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 2004.

		Estimated Escapement (a)		Hatchery Contribution (b)				Stray Contribution (b)			
				Male (c)		Female		Male (c)		Female	
Location	Age	Male (c)	Female	Number	%	Number	%	Number	%	Number	%
Campbell River											
	3	113	0	50	44.2	0	0.0	0	0.0	0	0.0
	4	296	177	151	51.1	71	40.0	0	0.0	0	0.0
	5	246	360	86	34.8	155	43.0	0	0.0	0	0.0
	6	7	0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	662	537	287	43.3	226	42.0	0	0.0	0	0.0
Quinsam River											
	3	558	57	265	47.5	11	19.9	5	0.9	16	28.3
	4	1,171	1,086	586	50.1	520	47.9	0	0.0	53	4.9
	5	572	1,348	279	48.8	649	48.2	0	0.0	0	0.0
	6	0	46	0	0.0	14	29.7	0	0.0	0	0.0
	Total	2,301	2,537	1,130	49.1	1,194	47.1	5	0.2	69	2.7
Quinsam Hatchery (e)											
Brood stock:		868	727								
Above Counting Fence:		1,339	488								
	Total	2,207	1,215	1,893	85.8	1,075	88.4	3	0.1	0	0.0

(a) From Appendix 9 & 4.
(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).
(c) Does not include jacks.
(d) Estimated contribution greater than 100%.
(e) CWT fish were removed from transfers above counting fence. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.
(f) Slight differences in calculations are due to rounding.

Appendix 14 - 05. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 2005.

				Hatchery Contribution (b)					Stray Contribution (b)			
		Estimated Escapement (a)		Male (c)		Female			Male (c)		Female	
Location	Age	Male (c)	Female	Number	%	Number	%		Number	%	Number	%
Campbell River												
	3	25	0	0	0.0	0	0.0		0	0.0	0	0.0
	4	188	125	29	15.5	12	9.8		0	0.0	0	0.0
	5	61	101	0	0.0	48	48.1		0	0.0	0	0.0
	6	0	16	0	0.0	0	0.0		0	0.0	0	0.0
	Total	275	242	29	10.6	61	25.1		0	0.0	0	0.0
Quinsam River												
	3	117	29	45	38.3	17	57.8		0	0.0	0	0.0
	4	968	1,248	685	70.7	469	37.6		0	0.0	0	0.0
	5	233	682	102	43.6	299	43.9		0	0.0	0	0.0
	6	9	10	17	190.6	0	0.0	(d)	0	0.0	0	0.0
	Total	1,327	1,968	848	63.9	785	39.9		0	0.0	0	0.0
Quinsam Hatchery (e)												
Brood stock:		1,058	847									
Above Counting Fence:		1,435	499									
	Total	2,493	1,346	1,970	79.0	1,019	75.7		6	0.2	65	4.8

(a) From Appendix 9 & 4.

(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).

(c) Does not include jacks.

(d) Estimated contribution greater than 100%.

(e) CWT fish were removed from transfers above counting fence. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.

(f) Slight differences in calculations are due to rounding.

Appendix 14 - 06. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 2006.

				Hatchery Contribution (b)					Stray Contribution (b)			
		Estimated Escapement (a)		Male (c)		Female			Male (c)		Female	
Location	Age	Male (c)	Female	Number	%	Number	%		Number	%	Number	%
Campbell River												
	3	76	11	96	127.1	0	0.0	(d)	0	0.0	0	0.0
	4	282	293	120	42.4	120	40.9		0	0.0	0	0.0
	5	206	543	11	5.5	35	6.5		0	0.0	0	0.0
	6	0	11	0	0.0	0	0.0		0	0.0	0	0.0
	Total	564	858	227	40.3	155	18.1		0	0.0	0	0.0
Quinsam River												
	3	338	60	162	47.9	63	104.8		0	0.0	0	0.0
	4	884	1,391	394	44.6	845	60.7		0	0.0	0	0.0
	5	482	1,040	313	64.8	818	78.6		0	0.0	0	0.0
	6	16	0	0	0.0	0	0.0		0	0.0	0	0.0
	Total	1,720	2,492	869	50.5	1,726	69.3		0	0.0	0	0.0
Quinsam Hatchery (e)												
Brood stock:		1,307	848									
Above Counting Fence:		1,196	509									
	Total	2,503	1,357	1,967	78.6	1,118	82.4		26	1.1	0	0.0

(a) From Appendix 9 & 4.

(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).

(c) Does not include jacks.

(d) Estimated contribution greater than 100%.

(e) CWT fish were removed from transfers above counting fence. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.

(f) Slight differences in calculations are due to rounding.

Appendix 14 - 07. Estimated hatchery and stray contributions to the Campbell River, Quinsam River, and Quinsam Hatchery Chinook salmon escapements, 2007.

		Estimated Escapement (a)		Hatchery Contribution (b)					Stray Contribution (b)			
				Male (c)		Female			Male (c)		Female	
Location	Age	Male (c)	Female	Number	%	Number	%		Number	%	Number	%
Campbell River												
	3	19	4	0	0.0	0	0.0		13	65.5	0	0.0
	4	193	212	92	47.8	18	8.4		0	0.0	133	62.8
	5	68	145	0	0.0	12	8.3		0	0.0	0	0.0
	6	5	4	0	0.0	0	0.0		0	0.0	0	0.0
	Total	285	365	92	32.4	30	8.2		13	4.4	133	36.4
Quinsam River												
	3	55	7	15	26.5	0	0.0		0	0.0	0	0.0
	4	664	700	282	42.5	265	37.8		0	0.0	0	0.0
	5	68	502	22	32.2	145	28.8		0	0.0	56	11.2
	6	0	28	0	0.0	37	129.6	(d)	0	0.0	0	0.0
	Total	787	1,238	319	40.5	446	36.0		0	0.0	56	4.5
Quinsam Hatchery (e)												
Brood stock:		1,050	906									
Above Counting Fence:		1,117	582									
Cold Cr.:		1	0									
	Total	2,168	1,488	1,920	88.6	1,227	82.5		0	0.0	0	0.0

(a) From Appendix 9 & 4.
(b) Contributions were calculated using CWT expansion for the estimated number of CWTs (from Appendix 13).
(c) Does not include jacks.
(d) Estimated contribution greater than 100%.
(e) CWT fish were removed from transfers above counting fence. These marked fish were encorporated into brood numbers, therefore transfers have been included with the rack total for hatchery contribution calculation, however adults of unknown mark status passing through the fence have not been included. Age stratification is not shown, as transferred fish were not scale sampled.
(f) Slight differences in calculations are due to rounding.

Appendix 15 - 99. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 1999.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
20-Oct	1A	0	1	0	1	0	0	0	0
	1B	1	1	0	2	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
22-Oct	1A	0	2	0	2	0	0	0	0
	1B	2	5	0	7	0	2	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Oct	1A	2	1	0	3	0	0	0	0
	1B	7	8	0	15	2	3	0	5
	CHA	0	5	0	5	0	0	0	0
	CHB	1	4	0	5	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
27-Oct	1A	0	0	0	0	0	1	0	1
	1B	1	2	0	3	0	1	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	2	3	0	5	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
29-Oct	1A	5	14	0	19	2	1	0	3
	1B	1	5	0	6	2	1	0	3
	CHA	1	2	0	3	0	5	0	5
	CHB	1	2	0	3	2	4	0	6
	CHC	0	2	0	2	0	0	0	0
2-Nov	1A	3	12	0	15	4	8	0	12
	1B	15	13	0	28	1	5	0	6
	CHA	1	2	0	3	0	0	0	0
	CHB	1	7	0	8	1	1	0	2
	CHC	0	1	0	1	0	2	0	2
3-Nov	1A	2	5	0	7	0	0	0	0
	1B	9	23	0	32	1	4	0	5
	CHA	0	0	0	0	0	0	0	0
	CHB	2	3	0	5	1	3	0	4
	CHC	0	0	0	0	0	0	0	0
5-Nov	1A	4	7	0	11	0	4	0	4
	1B	10	11	0	21	11	17	0	28
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
9-Nov	1A	3	8	0	11	2	8	0	10
	1B	12	7	0	19	1	1	0	2
	CHA	0	2	0	2	0	1	0	1
	CHB	0	0	0	0	0	2	0	2
	CHC	0	0	0	0	0	2	0	2

Appendix 15 - 99. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 1999. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
10-Nov	1A	2	4	0	6	2	4	0	6
	1B	1	0	0	1	0	2	0	2
	CHA	1	4	0	5	0	0	0	0
	CHB	0	4	0	4	2	3	0	5
	CHC	0	0	0	0	0	0	0	0
12-Nov	1A	0	1	0	1	2	5	0	7
	1B	24	22	0	46	3	7	0	10
	CHA	2	4	0	6	0	5	0	5
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
16-Nov	1A	1	1	0	2	0	0	0	0
	1B	8	6	0	14	2	4	0	6
	CHA	1	1	0	2	1	1	0	2
	CHB	0	0	0	0	1	3	0	4
	CHC	0	0	0	0	0	0	0	0
19-Nov	1A	0	1	0	1	0	0	0	0
	1B	1	0	0	1	0	0	0	0
	CHA	0	0	0	0	1	1	0	2
	CHB	2	1	0	3	0	4	0	4
	CHC	0	0	0	0	0	0	0	0
23-Nov	1A	0	0	0	0	0	0	0	0
	1B	6	7	0	13	0	1	0	1
	CHA	1	1	0	2	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Nov	1A	0	0	0	0	3	0	0	3
	1B	0	0	0	0	1	3	0	4
	CHA	0	0	0	0	1	0	0	1
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	136	215	0	351	49	119	0	168

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 15 - 00. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2000.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
24-Oct	1A	6	8	0	14	0	0	0	0
	1B	6	14	0	20	0	0	0	0
	CHA	0	3	0	3	0	0	0	0
	CHB	2	2	0	4	0	0	0	0
	CHC	1	0	0	1	0	0	0	0
25-Oct	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	1	1	0	2	0	0	0	0
	CHC	0	1	0	1	0	0	0	0
27-Oct	1A	3	6	0	9	4	8	0	12
	1B	20	11	0	31	3	6	0	9
	CHA	0	0	0	0	0	0	0	0
	CHB	1	5	0	6	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
31-Oct	1A	6	11	0	17	1	4	0	5
	1B	15	24	0	39	3	2	0	5
	CHA	1	4	0	5	0	1	0	1
	CHB	9	7	0	16	1	4	0	5
	CHC	0	0	0	0	2	0	0	2
1-Nov	1A	0	3	0	3	0	0	0	0
	1B	3	1	0	4	0	0	0	0
	CHA	1	0	0	1	0	0	0	0
	CHB	0	0	0	0	0	1	0	1
	CHC	0	0	0	0	0	0	0	0
3-Nov	1A	2	8	0	10	6	9	0	15
	1B	20	11	0	31	11	16	0	27
	CHA	0	0	0	0	2	3	0	5
	CHB	0	3	0	3	3	6	0	9
	CHC	0	0	0	0	0	0	0	0
7-Nov	1A	1	5	0	6	0	8	0	8
	1B	5	6	0	11	6	3	0	9
	CHA	0	0	0	0	0	0	0	0
	CHB	1	0	0	1	0	0	0	0
	CHC	0	0	0	0	1	1	0	2
10-Nov	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	6	6	0	12
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
14-Nov	1A	0	3	0	3	1	5	0	6
	1B	5	7	0	12	4	1	0	5
	CHA	0	0	0	0	1	0	0	1
	CHB	1	0	0	1	0	0	0	0
	CHC	0	0	0	0	0	0	0	0

Appendix 15 - 00. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2000. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
17-Nov	1A	0	1	0	1	0	2	0	2
	1B	3	1	0	4	2	5	0	7
	CHA	0	0	0	0	0	1	0	1
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	1	0	0	1
21-Nov	1A	0	0	0	0	0	1	0	1
	1B	1	0	0	1	3	0	0	3
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
24-Nov	1A	0	0	0	0	0	1	0	1
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
28-Nov	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	1	0	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	114	146	0	260	62	94	0	156

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 15 - 01. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2001.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
23-Oct	1A	3	4	0	7	0	0	0	0
	1B	1	3	0	4	0	0	0	0
	CHA	1	3	0	4	0	0	0	0
	CHB	1	3	0	4	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
24-Oct	1A	0	0	0	0	0	0	0	0
	1B	0	2	0	2	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Oct	1A	2	5	1	8	1	4	0	5
	1B	0	0	0	0	0	0	0	0
	CHA	1	1	0	2	0	0	0	0
	CHB	3	2	0	5	2	2	0	4
	CHC	2	0	0	2	0	0	0	0
30-Oct	1A	2	4	0	6	0	3	0	3
	1B	0	0	0	0	0	0	0	0
	CHA	1	3	0	4	1	2	0	3
	CHB	2	1	0	3	2	2	0	4
	CHC	0	0	0	0	0	0	0	0
31-Oct	1A	0	0	0	0	0	0	0	0
	1B	24	21	0	45	0	1	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	1	0	0	1	0	0	0	0
2-Nov	1A	1	5	0	6	3	4	0	7
	1B	6	7	0	13	3	6	0	9
	CHA	2	2	0	4	5	3	0	8
	CHB	1	1	0	2	0	0	0	0
	CHC	2	0	0	2	0	0	0	0
7-Nov	1A	3	3	0	6	0	4	0	4
	1B	4	3	0	7	2	2	0	4
	CHA	2	0	0	2	0	2	0	2
	CHB	0	0	0	0	1	0	0	1
	CHC	0	0	0	0	0	0	0	0
9-Nov	1A	0	2	0	2	3	3	0	6
	1B	11	10	0	21	2	4	0	6
	CHA	0	2	0	2	3	0	0	3
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	1	0	0	1
13-Nov	1A	0	0	0	0	0	2	0	2
	1B	0	1	0	1	4	4	0	8
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	1	0	1
	CHC	0	0	0	0	0	0	0	0

Appendix 15 - 01. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2001. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
14-Nov	1A	0	1	0	1	0	0	0	0
	1B	1	3	0	4	1	3	0	4
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
15-Nov	1A	0	0	0	0	0	1	0	1
	1B	0	0	0	0	2	0	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
16-Nov	1A	1	1	0	2	0	0	0	0
	1B	7	2	0	9	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
20-Nov	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	1	0	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
21-Nov	1A	0	0	0	0	0	0	0	0
	1B	5	0	0	5	1	0	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
23-Nov	1A	0	0	0	0	0	0	0	0
	1B	2	1	0	3	3	1	0	4
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
3-Dec	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	2	0	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	92	96	1	189	43	54	0	97

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 15 - 02. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2002.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
18-Oct	1A	1	0	0	1	0	0	0	0
	1B	2	8	0	10	0	0	0	0
	CHA	1	1	0	2	0	0	0	0
	CHB	1	1	0	2	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
22-Oct	1A	0	2	0	2	0	0	0	0
	1B	5	7	0	12	1	4	0	5
	CHA	3	1	0	4	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
23-Oct	1A	0	3	0	3	1	0	0	1
	1B	2	3	0	5	0	2	0	2
	CHA	0	2	0	2	0	1	0	1
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
24-Oct	1A	0	0	0	0	0	3	0	3
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	1	0	1
25-Oct	1A	4	0	0	4	0	2	0	2
	1B	5	11	0	16	2	4	0	6
	CHA	3	3	0	6	0	0	0	0
	CHB	5	3	0	8	3	2	0	5
	CHC	1	0	0	1	0	0	0	0
29-Oct	1A	2	3	0	5	2	0	0	2
	1B	7	10	0	17	2	3	0	5
	CHA	2	2	0	4	1	3	0	4
	CHB	3	7	0	10	5	3	0	8
	CHC	0	0	0	0	0	0	0	0
30-Oct	1A	2	0	0	2	2	0	0	2
	1B	1	5	0	6	2	3	0	5
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
1-Nov	1A	1	3	0	4	3	2	0	5
	1B	8	11	0	19	4	6	0	10
	CHA	2	5	0	7	3	2	0	5
	CHB	2	2	0	4	3	4	0	7
	CHC	1	0	0	1	0	0	0	0
5-Nov	1A	1	2	0	3	1	1	0	2
	1B	7	5	0	12	3	5	0	8
	CHA	2	4	0	6	2	3	0	5
	CHB	3	1	0	4	1	2	0	3
	CHC	1	0	0	1	0	0	0	0

Appendix 15 - 02. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2002. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
6-Nov	1A	2	4	0	6	2	1	0	3
	1B	4	12	0	16	1	3	0	4
	CHA	0	2	0	2	0	0	0	0
	CHB	1	1	0	2	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
8-Nov	1A	1	1	0	2	0	1	0	1
	1B	2	3	0	5	1	1	0	2
	CHA	0	0	0	0	1	2	0	3
	CHB	0	0	0	0	2	1	0	3
	CHC	0	0	0	0	1	0	0	1
12-Nov	1A	3	7	0	10	3	2	0	5
	1B	0	1	0	1	0	2	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
13-Nov	1A	0	0	0	0	0	0	0	0
	1B	10	14	0	24	7	4	0	11
	CHA	0	1	0	1	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
15-Nov	1A	1	1	0	2	3	5	0	8
	1B	5	7	0	12	7	11	0	18
	CHA	0	2	0	2	0	1	0	1
	CHB	0	0	0	0	0	2	0	2
	CHC	0	0	0	0	0	0	0	0
19-Nov	1A	0	0	0	0	0	0	0	0
	1B	11	6	0	17	0	3	0	3
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
22-Nov	1A	0	1	0	1	0	1	0	1
	1B	3	1	0	4	11	7	0	18
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Nov	1A	0	0	0	0	0	0	0	0
	1B	1	0	0	1	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	2	0	2
	CHC	0	0	0	0	0	0	0	0
29-Nov	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	1	1	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	122	169	0	291	81	106	0	187

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 15 - 03. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2003.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
21-Oct	1A	0	0	0	0	0	0	0	0
	1B	0	2	0	2	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
24-Oct	1A	0	1	0	1	0	0	0	0
	1B	2	8	0	10	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	1	0	1	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
28-Oct	1A	0	5	0	5	0	0	0	0
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
29-Oct	1A	2	1	0	3	0	0	0	0
	1B	17	14	0	31	2	0	0	2
	CHA	1	1	0	2	0	0	0	0
	CHB	1	2	0	3	0	0	0	0
	CHC	0	1	0	1	0	0	0	0
31-Oct	1A	0	5	0	5	1	4	0	5
	1B	7	2	0	9	7	9	0	16
	CHA	2	2	0	4	0	1	0	1
	CHB	0	0	0	0	0	3	0	3
	CHC	3	1	0	4	0	0	0	0
3-Nov	1A	0	0	0	0	0	4	0	4
	1B	4	7	0	11	5	2	0	7
	CHA	0	0	0	0	1	0	0	1
	CHB	2	2	0	4	1	0	0	1
	CHC	0	0	0	0	1	1	0	2
5-Nov	1A	0	0	0	0	0	1	0	1
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
7-Nov	1A	1	0	0	1	0	1	0	1
	1B	6	0	0	6	3	4	0	7
	CHA	0	1	0	1	1	1	0	2
	CHB	0	0	0	0	2	1	0	3
	CHC	0	0	0	0	0	0	0	0
10-Nov	1A	0	1	0	1	0	0	0	0
	1B	3	2	0	5	1	2	0	3
	CHA	0	0	0	0	1	1	0	2
	CHB	1	3	0	4	0	0	0	0
	CHC	0	0	0	0	1	0	0	1

Appendix 15 - 03. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2003. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
14-Nov	1A	1	0	0	1	0	1	0	1
	1B	2	0	0	2	3	2	0	5
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	3	0	3
	CHC	0	0	0	0	0	0	0	0
18-Nov	1A	1	0	0	1	0	0	0	0
	1B	1	0	0	1	1	1	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
21-Nov	1A	0	0	0	0	1	0	0	1
	1B	0	1	0	1	3	0	0	3
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Nov	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	1	0	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	57	63	0	120	36	42	0	78

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 15 - 04. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2004.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
14-Oct	1A	0	1	0	1	0	0	0	0
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
19-Oct	1A	0	0	0	0	0	0	0	0
	1B	3	1	0	4	0	1	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
22-Oct	1A	1	2	0	3	0	0	0	0
	1B	2	3	0	5	0	0	0	0
	CHA	0	1	0	1	0	0	0	0
	CHB	2	0	0	2	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Oct	1A	1	4	0	5	1	0	0	1
	1B	6	12	0	18	1	2	0	3
	CHA	1	4	0	5	0	0	0	0
	CHB	1	3	0	4	1	0	0	1
	CHC	0	0	0	0	0	0	0	0
27-Oct	1A	0	0	0	0	0	0	0	0
	1B	3	8	0	11	1	1	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
29-Oct	1A	0	1	0	1	0	2	0	2
	1B	10	7	0	17	2	6	0	8
	CHA	1	0	0	1	0	4	0	4
	CHB	3	1	0	4	1	3	0	4
	CHC	0	0	0	0	0	0	0	0
2-Nov	1A	0	0	0	0	0	1	0	1
	1B	6	6	0	12	1	1	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
3-Nov	1A	3	4	0	7	1	3	0	4
	1B	13	10	0	23	1	3	0	4
	CHA	0	1	0	1	1	0	0	1
	CHB	2	2	0	4	0	0	0	0
	CHC	0	1	0	1	0	1	0	1
8-Nov	1A	0	2	0	2	1	1	0	2
	1B	9	5	0	14	1	2	0	3
	CHA	1	0	0	1	1	2	0	3
	CHB	3	1	0	4	0	1	0	1
	CHC	0	0	0	0	0	0	0	0

Appendix 15 - 04. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2004. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
10-Nov	1A	0	0	0	0	0	0	0	0
	1B	6	3	0	9	1	0	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
12-Nov	1A	1	3	0	4	1	3	0	4
	1B	5	2	0	7	2	3	0	5
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	1	1	0	2
	CHC	0	0	0	0	1	0	0	1
16-Nov	1A	1	0	0	1	1	1	0	2
	1B	0	0	0	0	0	1	0	1
	CHA	0	0	0	0	1	0	0	1
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
19-Nov	1A	0	0	0	0	2	0	0	2
	1B	0	1	0	1	2	0	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
23-Nov	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	3	1	0	4
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	84	89	0	173	29	44	0	73

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 15 - 05. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2005.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
17-Oct	1A	0	1	0	1	0	0	0	0
	1B	0	2	0	2	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
21-Oct	1A	0	1	0	1	0	0	0	0
	1B	2	5	0	7	0	1	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
25-Oct	1A	1	3	0	4	0	0	0	0
	1B	2	0	0	2	0	1	0	1
	CHA	1	2	0	3	0	0	0	0
	CHB	1	2	0	3	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Oct	1A	0	0	0	0	0	0	0	0
	1B	4	6	0	10	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
28-Oct	1A	3	2	0	5	1	2	0	3
	1B	2	3	0	5	4	3	0	7
	CHA	0	1	0	1	2	2	0	4
	CHB	1	2	0	3	0	1	0	1
	CHC	0	1	0	1	0	0	0	0
1-Nov	1A	0	2	0	2	2	1	0	3
	1B	6	6	0	12	0	5	0	5
	CHA	1	1	0	2	0	1	0	1
	CHB	0	2	0	2	0	1	0	1
	CHC	1	1	0	2	0	1	0	1
4-Nov	1A	1	2	0	3	2	2	0	4
	1B	9	9	0	18	3	0	0	3
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	1	0	1
	CHC	0	0	0	0	1	1	0	2
8-Nov	1A	0	2	0	2	1	2	0	3
	1B	3	0	0	3	2	3	0	5
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
10-Nov	1A	0	0	0	0	0	0	0	0
	1B	5	1	0	6	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0

Appendix 15 - 05. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2005. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
11-Nov	1A	0	0	0	0	0	0	0	0
	1B	1	0	0	1	1	1	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	1	0	0	1	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
15-Nov	1A	0	0	0	0	0	0	0	0
	1B	3	0	0	3	2	1	0	3
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
18-Nov	1A	0	0	0	0	0	0	0	0
	1B	4	0	0	4	2	1	0	3
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
22-Nov	1A	0	0	0	0	0	0	0	0
	1B	1	0	0	1	2	0	0	2
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	53	57	0	110	25	31	0	56

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 15 - 06. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2006.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
16-Oct	1A	0	1	0	1	0	0	0	0
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
18-Oct	1A	0	1	0	1	0	0	0	0
	1B	0	1	0	1	0	0	0	0
	CHA	0	1	0	1	0	0	0	0
	CHB	1	0	0	1	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
23-Oct	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0
	CHA	1	3	0	4	0	0	0	0
	CHB	0	2	0	2	1	0	0	1
	CHC	0	0	0	0	0	0	0	0
24-Oct	1A	3	3	0	6	0	1	0	1
	1B	4	6	0	10	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Oct	1A	0	2	0	2	0	2	0	2
	1B	2	3	0	5	1	1	0	2
	CHA	0	1	0	1	0	1	0	1
	CHB	0	1	0	1	0	2	0	2
	CHC	1	0	0	1	0	0	0	0
27-Oct	1A	0	0	0	0	0	0	0	0
	1B	5	6	0	11	3	1	0	4
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
31-Oct	1A	1	9	0	10	1	2	0	3
	1B	5	9	0	14	4	5	0	9
	CHA	2	4	0	6	0	0	0	0
	CHB	4	6	0	10	0	0	0	0
	CHC	1	1	0	2	0	0	0	0
1-Nov	1A	0	0	0	0	0	0	0	0
	1B	11	21	0	32	2	2	0	4
	CHA	0	2	0	2	0	1	0	1
	CHB	6	2	0	8	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
3-Nov	1A	5	5	0	10	1	8	0	9
	1B	13	26	0	39	12	22	0	34
	CHA	0	2	0	2	2	3	0	5
	CHB	2	1	0	3	6	7	0	13
	CHC	0	0	0	0	0	0	0	0

Appendix 15 - 06. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2006. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
7-Nov	1A	5	8	0	13	2	2	0	4
	1B	15	9	0	24	7	4	0	11
	CHA	1	2	0	3	0	4	0	4
	CHB	3	1	0	4	2	2	0	4
	CHC	1	1	0	2	1	0	0	1
8-Nov	1A	0	0	0	0	0	0	0	0
	1B	1	4	0	5	1	4	0	5
	CHA	2	4	0	6	0	0	0	0
	CHB	0	0	0	0	2	1	0	3
	CHC	0	0	0	0	0	0	0	0
10-Nov	1A	0	3	0	3	3	3	0	6
	1B	2	1	0	3	1	3	0	4
	CHA	0	1	0	1	1	2	0	3
	CHB	3	5	0	8	5	1	0	6
	CHC	0	0	0	0	0	1	0	1
14-Nov	1A	0	4	0	4	0	2	0	2
	1B	14	13	0	27	3	2	0	5
	CHA	1	0	0	1	0	0	0	0
	CHB	2	0	0	2	2	3	0	5
	CHC	0	0	0	0	0	1	0	1
16-Nov	1A	0	0	0	0	0	0	0	0
	1B	5	2	0	7	4	1	0	5
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
17-Nov	1A	1	0	0	1	0	4	0	4
	1B	1	1	0	2	1	0	0	1
	CHA	0	0	0	0	1	0	0	1
	CHB	0	2	0	2	3	0	0	3
	CHC	0	0	0	0	0	0	0	0
21-Nov	1A	1	0	0	1	0	0	0	0
	1B	0	1	0	1	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
22-Nov	1A	0	0	0	0	0	0	0	0
	1B	3	0	0	3	4	3	0	7
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
24-Nov	1A	0	0	0	0	1	0	0	1
	1B	1	2	0	3	0	1	0	1
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	129	183	0	312	77	102	0	179

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 15 - 07. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2007.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
16-Oct	1A	0	2	0	2	0	0	0	0
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	1	0	1	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
19-Oct	1A	1	3	0	4	0	1	0	1
	1B	1	3	0	4	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	1	0	0	1	0	1	0	1
	CHC	0	0	0	0	0	0	0	0
23-Oct	1A	1	3	0	4	0	1	0	1
	1B	5	5	0	10	1	2	0	3
	CHA	0	3	0	3	0	0	0	0
	CHB	1	4	0	5	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
24-Oct	1A	0	0	0	0	0	0	0	0
	1B	2	4	0	6	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
26-Oct	1A	3	3	0	6	1	1	0	2
	1B	8	6	0	14	3	5	0	8
	CHA	1	0	0	1	0	0	0	0
	CHB	1	2	0	3	1	2	0	3
	CHC	0	0	0	0	0	0	0	0
30-Oct	1A	1	4	0	5	3	3	0	6
	1B	9	7	0	16	3	3	0	6
	CHA	1	2	0	3	1	0	0	1
	CHB	2	3	0	5	1	2	0	3
	CHC	1	0	0	1	0	0	0	0
2-Nov	1A	1	3	0	4	0	1	0	1
	1B	3	4	0	7	4	4	0	8
	CHA	0	0	0	0	1	1	0	2
	CHB	2	3	0	5	1	3	0	4
	CHC	0	1	0	1	0	0	0	0
6-Nov	1A	1	4	0	5	2	1	0	3
	1B	8	7	0	15	3	2	0	5
	CHA	0	2	0	2	0	0	0	0
	CHB	0	4	0	4	2	2	0	4
	CHC	1	1	0	2	1	1	0	2
9-Nov	1A	1	1	0	2	1	5	0	6
	1B	2	3	0	5	1	2	0	3
	CHA	0	0	0	0	0	1	0	1
	CHB	2	2	0	4	0	3	0	3
	CHC	0	0	0	0	0	0	0	0

Appendix 15 - 07. Staple tagging and recovery of tagged Chinook salmon carcasses in the Campbell River, 2007. Cont'd

Date	Area (a)	Tagged				Recovered			
		Male	Female	Jack	Total	Male	Female	Jack	Total
15-Nov	1A	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	2	0	2
	CHC	0	0	0	0	0	1	0	1
20-Nov	1A	0	0	0	0	1	0	0	1
	1B	0	0	0	0	0	0	0	0
	CHA	0	0	0	0	0	0	0	0
	CHB	0	0	0	0	0	0	0	0
	CHC	0	0	0	0	0	0	0	0
	Total	60	90	0	150	31	50	0	81

(a) The Second Island Channel is divided into three sections: CHA is the top 1/3, CHB is the middle 1/3, and CHC is the bottom 1/3 of the channel. See Figure 2 for location of capture and recovery areas.

Appendix 16 - 99. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 1999.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
18-Oct	2B	0	1	0	1	0	0	0	0
	2C	0	1	0	1	0	0	0	0
	2D	0	0	0	0	0	0	0	0
19-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	3	0	3	0	0	0	0
	2D	1	0	0	1	0	0	0	0
21-Oct	2B	0	0	0	0	0	0	0	0
	2C	2	1	0	3	0	1	0	1
	2D	1	5	0	6	1	1	0	2
25-Oct	2B	1	0	0	1	0	0	0	0
	2C	3	3	0	6	2	0	0	2
	2D	8	6	0	14	1	2	0	3
27-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
28-Oct	2B	1	1	0	2	0	0	0	0
	2C	1	0	0	1	0	0	0	0
	2D	4	4	0	8	4	1	0	5
1-Nov	2B	2	4	0	6	0	0	0	0
	2C	3	11	0	14	0	0	0	0
	2D	20	17	2	39	4	6	0	10
3-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	2	0	2
4-Nov	2B	12	16	0	28	2	4	0	6
	2C	8	11	0	19	0	5	0	5
	2D	10	9	0	19	11	10	1	22
8-Nov	2B	3	7	0	10	2	1	0	3
	2C	7	6	0	13	3	6	0	9
	2D	5	8	0	13	3	1	0	4
9-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	0	0	1
10-Nov	2B	0	0	0	0	0	0	0	0
	2C	1	0	0	1	0	0	0	0
	2D	0	0	0	0	0	0	0	0
11-Nov	2B	1	5	0	6	2	4	0	6
	2C	3	3	1	7	1	2	0	3
	2D	12	5	0	17	4	1	0	5
12-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	3	0	3
15-Nov	2B	6	11	0	17	1	4	0	5
	2C	9	11	0	20	0	1	0	1
	2D	20	10	0	30	11	4	0	15

Appendix 16 - 99. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 1999. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
16-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
18-Nov	2B	7	9	0	16	3	7	0	10
	2C	10	6	0	16	3	8	0	11
	2D	19	10	0	29	14	5	0	19
22-Nov	2B	7	5	0	12	5	5	0	10
	2C	6	10	0	16	7	8	0	15
	2D	13	11	0	24	14	8	0	22
23-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	2	0	3
25-Nov	2B	2	6	0	8	4	3	0	7
	2C	4	3	0	7	7	6	0	13
	2D	7	4	0	11	11	11	0	22
29-Nov	2B	1	1	0	2	0	0	0	0
	2C	2	0	0	2	1	0	0	1
	2D	5	1	0	6	6	2	0	8
2-Dec	2B	0	0	0	0	0	1	0	1
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
	Total	227	225	3	455	129	128	1	258

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 16 - 00. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2000.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
23-Oct	2B	1	0	0	1	0	0	0	0
	2C	1	0	0	1	0	0	0	0
	2D	0	1	0	1	0	0	0	0
25-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	3	0	3	0	0	0	0
26-Oct	2B	3	9	0	12	1	0	0	1
	2C	3	3	0	6	0	0	0	0
	2D	3	3	0	6	0	2	0	2
30-Oct	2B	12	15	0	27	0	6	0	6
	2C	14	8	0	22	3	1	0	4
	2D	1	2	0	3	0	0	0	0
31-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	1	0	2
1-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	9	9	0	18	2	3	0	5
2-Nov	2B	13	24	0	37	9	10	0	19
	2C	16	16	0	32	7	5	0	12
	2D	6	3	0	9	8	4	0	12
3-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	1	2	0	3	0	0	0	0
6-Nov	2B	31	39	0	70	6	14	0	20
	2C	10	10	0	20	8	12	0	20
	2D	10	13	3	26	6	9	0	15
7-Nov	2B	0	0	0	0	0	0	0	0
	2C	14	16	0	30	10	6	0	16
	2D	0	0	0	0	0	1	0	1
9-Nov	2B	22	40	0	62	33	45	0	78
	2C	7	10	0	17	11	17	0	28
	2D	9	13	0	22	8	8	0	16
10-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	2	2	0	4
	2D	0	0	0	0	1	0	0	1
13-Nov	2B	14	22	0	36	15	25	0	40
	2C	5	5	0	10	10	16	0	26
	2D	0	5	0	5	0	1	0	1
14-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	4	3	0	7	1	8	0	9
16-Nov	2B	12	11	0	23	13	19	0	32
	2C	4	3	0	7	4	6	0	10
	2D	6	8	0	14	6	8	0	14
17-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1

Appendix 16 - 00. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2000. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
20-Nov	2B	6	8	0	14	9	7	0	16
	2C	2	3	0	5	3	4	0	7
	2D	0	1	0	1	2	5	0	7
23-Nov	2B	4	5	0	9	6	9	0	15
	2C	0	3	0	3	0	3	0	3
	2D	1	0	0	1	0	1	0	1
27-Nov	2B	2	2	0	4	2	0	0	2
	2C	1	2	0	3	0	1	0	1
	2D	0	1	0	1	0	0	0	0
30-Nov	2B	0	0	0	0	0	1	0	1
	2C	0	0	0	0	1	0	0	1
	2D	0	0	0	0	0	0	0	0
	Total	247	321	3	571	188	261	0	449

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 16 - 01. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2001.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
19-Oct	2B	3	2	0	5	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	2	4	0	6	0	0	0	0
22-Oct	2B	6	6	0	12	1	1	0	2
	2C	2	2	0	4	0	0	0	0
	2D	0	2	0	2	0	1	0	1
24-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	9	9	0	18	1	3	0	4
25-Oct	2B	12	21	0	33	5	7	0	12
	2C	4	7	0	11	1	1	0	2
	2D	2	3	0	5	0	1	0	1
26-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	4	5	0	9	4	7	0	11
29-Oct	2B	10	12	0	22	4	3	0	7
	2C	9	9	0	18	2	5	0	7
	2D	3	5	0	8	5	5	0	10
30-Oct	2B	0	0	0	0	0	0	0	0
	2C	10	11	0	21	3	2	0	5
	2D	11	16	0	27	3	4	0	7
31-Oct	2B	15	12	0	27	7	5	0	12
	2C	0	5	0	5	2	3	0	5
	2D	0	0	0	0	0	0	0	0
1-Nov	2B	11	16	0	27	7	7	0	14
	2C	19	13	0	32	12	13	0	25
	2D	20	12	0	32	11	13	0	24
2-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	2	2	0	4	1	3	0	4
5-Nov	2B	57	52	0	109	11	18	0	29
	2C	0	0	0	0	0	0	0	0
	2D	7	8	0	15	5	3	0	8
6-Nov	2B	15	22	0	37	7	10	0	17
	2C	33	28	0	61	12	9	0	21
	2D	25	17	0	42	10	10	0	20
7-Nov	2B	15	14	0	29	22	30	0	52
	2C	0	0	0	0	0	0	0	0
	2D	4	10	0	14	5	5	0	10
8-Nov	2B	14	9	0	23	19	21	0	40
	2C	24	20	0	44	45	44	0	89
	2D	18	10	0	28	26	22	0	48
9-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	1	1	0	2	2	3	0	5
12-Nov	2B	23	12	0	35	24	26	0	50
	2C	9	6	0	15	13	10	0	23
	2D	0	0	0	0	0	0	0	0

Appendix 16 - 01. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2001. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
13-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	11	5	0	16	12	10	0	22
14-Nov	2B	3	6	0	9	14	8	0	22
	2C	1	0	0	1	1	0	0	1
	2D	0	0	0	0	1	0	0	1
15-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	1	0	1
	2D	1	1	0	2	6	2	0	8
19-Nov	2B	1	5	0	6	3	2	0	5
	2C	3	2	0	5	6	3	0	9
	2D	1	2	0	3	4	2	0	6
27-Nov	2B	1	1	0	2	0	1	0	1
	2C	2	1	0	3	3	2	0	5
	2D	1	2	0	3	2	2	0	4
29-Nov	2B	0	0	0	0	2	1	0	3
	2C	0	0	0	0	1	1	0	2
	2D	0	0	0	0	0	0	0	0
	Total	424	408	0	832	325	330	0	655

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 16 - 02. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2002.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
17-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	1	1	0	0	0	0
	2D	1	0	0	1	0	0	0	0
21-Oct	2B	3	2	0	5	0	0	0	0
	2C	2	2	0	4	0	0	0	0
	2D	0	0	0	0	0	0	0	0
22-Oct	2B	0	0	0	0	0	0	0	0
	2C	2	2	0	4	0	0	0	0
	2D	1	11	1	13	0	0	0	0
23-Oct	2B	2	7	0	9	3	2	0	5
	2C	1	5	0	6	2	2	0	4
	2D	0	0	0	0	0	0	0	0
24-Oct	2B	0	0	0	0	0	0	0	0
	2C	1	2	0	3	1	2	0	3
	2D	5	7	0	12	1	9	1	11
28-Oct	2B	18	33	0	51	2	4	0	6
	2C	10	12	0	22	0	4	0	4
	2D	10	15	1	26	2	5	0	7
29-Oct	2B	0	0	0	0	0	0	0	0
	2C	13	17	0	30	3	5	0	8
	2D	0	0	0	0	0	0	0	0
30-Oct	2B	6	16	0	22	14	25	0	39
	2C	3	5	0	8	10	10	0	20
	2D	0	0	0	0	0	0	0	0
31-Oct	2B	4	1	0	5	0	0	0	0
	2C	4	4	0	8	9	19	0	28
	2D	10	13	0	23	9	11	1	21
4-Nov	2B	11	29	0	40	8	13	0	21
	2C	18	20	0	38	3	7	0	10
	2D	16	38	0	54	10	14	0	24
5-Nov	2B	0	0	0	0	0	0	0	0
	2C	7	25	0	32	5	4	0	9
	2D	0	0	0	0	0	0	0	0
6-Nov	2B	9	15	0	24	15	33	0	48
	2C	3	8	1	12	6	11	0	17
	2D	0	0	0	0	0	0	0	0
7-Nov	2B	0	0	0	0	0	0	0	0
	2C	4	6	0	10	6	20	0	26
	2D	21	11	0	32	10	23	0	33
11-Nov	2B	3	17	0	20	2	8	0	10
	2C	11	24	0	35	5	10	0	15
	2D	4	0	0	4	2	3	0	5
12-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	7	12	0	19	4	2	0	6
13-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	1	0	2

Appendix 16 - 02. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2002. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
14-Nov	2B	0	5	0	5	1	5	0	6
	2C	5	6	0	11	1	5	0	6
	2D	6	9	0	15	4	8	0	12
15-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	1	0	2
18-Nov	2B	0	3	0	3	0	2	0	2
	2C	0	4	0	4	2	1	0	3
	2D	4	6	0	10	1	2	0	3
19-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	0	0	1
21-Nov	2B	1	2	0	3	1	0	0	1
	2C	0	8	0	8	2	9	0	11
	2D	6	7	0	13	6	11	0	17
22-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
25-Nov	2B	2	4	0	6	1	3	0	4
	2C	4	4	0	8	3	7	0	10
	2D	3	4	0	7	5	11	0	16
28-Nov	2B	0	1	0	1	2	3	0	5
	2C	0	2	0	2	4	2	0	6
	2D	0	3	0	3	4	3	0	7
4-Dec	2B	0	0	0	0	0	2	0	2
	2C	0	0	0	0	0	2	0	2
	2D	0	0	0	0	0	4	0	4
	Total	241	427	4	672	172	329	2	503

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 16 - 03. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2003.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
20-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	1	1	0	2	0	0	0	0
21-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	2	0	2	0	0	0	0
23-Oct	2B	0	3	0	3	0	0	0	0
	2C	0	3	0	3	0	0	0	0
	2D	3	7	1	11	1	1	0	2
27-Oct	2B	6	30	0	36	0	0	0	0
	2C	9	20	0	29	0	1	0	1
	2D	2	7	0	9	0	1	0	1
28-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	32	35	0	67	0	5	0	5
29-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	0	0	1
30-Oct	2B	17	26	0	43	4	22	0	26
	2C	13	20	0	33	3	14	0	17
	2D	5	5	0	10	2	5	0	7
3-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
4-Nov	2B	13	9	0	22	8	16	0	24
	2C	3	5	0	8	4	18	0	22
	2D	6	8	0	14	6	9	0	15
5-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	7	12	0	19	13	18	0	31
7-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	0	0	1
12-Nov	2B	19	50	0	69	13	8	0	21
	2C	19	13	0	32	2	5	0	7
	2D	41	21	0	62	6	18	0	24
13-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	3	2	1	6	3	5	0	8
17-Nov	2B	24	10	0	34	13	27	0	40
	2C	3	3	0	6	9	14	0	23
	2D	18	9	0	27	29	17	0	46
20-Nov	2B	9	10	0	19	13	13	0	26
	2C	8	4	0	12	2	3	0	5
	2D	10	11	0	21	18	11	0	29

Appendix 16 - 03. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2003. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
25-Nov	2B	5	2	0	7	3	7	0	10
	2C	2	2	0	4	1	1	0	2
	2D	8	0	0	8	5	7	0	12
27-Nov	2B	0	0	0	0	2	5	0	7
	2C	0	0	0	0	1	2	0	3
	2D	0	0	0	0	3	2	0	5
	Total	286	330	2	618	166	256	0	422

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 16 - 04. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2004.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
13-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	1	0	1	0	0	0	0
	2D	0	0	0	0	0	0	0	0
18-Oct	2B	1	3	0	4	0	0	0	0
	2C	1	2	0	3	0	0	0	0
	2D	2	6	0	8	0	0	0	0
20-Oct	2B	0	3	0	3	0	1	0	1
	2C	2	3	0	5	0	0	0	0
	2D	0	1	0	1	0	0	0	0
21-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	3	8	0	11	1	4	0	5
25-Oct	2B	2	16	0	18	0	1	0	1
	2C	6	7	0	13	0	0	0	0
	2D	5	9	0	14	0	2	0	2
27-Oct	2B	0	6	0	6	0	7	0	7
	2C	3	5	0	8	1	4	0	5
	2D	0	0	0	0	0	0	0	0
28-Oct	2B	0	0	0	0	0	0	0	0
	2C	1	5	0	6	0	5	0	5
	2D	12	17	0	29	4	7	0	11
29-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
1-Nov	2B	12	28	0	40	1	3	0	4
	2C	13	17	0	30	1	3	0	4
	2D	1	0	0	1	0	0	0	0
2-Nov	2B	0	0	0	0	0	0	0	0
	2C	2	3	0	5	0	1	0	1
	2D	21	23	0	44	12	15	0	27
3-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	4	0	4
4-Nov	2B	11	23	0	34	5	21	0	26
	2C	20	15	0	35	13	19	0	32
	2D	0	1	0	1	2	2	0	4
5-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	16	21	0	37	3	9	0	12
9-Nov	2B	5	7	0	12	0	3	0	3
	2C	4	6	0	10	3	2	0	5
	2D	11	9	0	20	6	13	0	19
10-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	0	0	1
11-Nov	2B	2	2	0	4	5	7	0	12
	2C	4	4	0	8	5	3	0	8
	2D	8	3	0	11	9	8	0	17

Appendix 16 - 04. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2004. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
12-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	2	0	3
15-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	1	0	0	1	0	0	0	0
18-Nov	2B	1	2	0	3	0	0	0	0
	2C	0	1	0	1	0	1	0	1
	2D	0	0	0	0	0	0	0	0
19-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	1	0	2
22-Nov	2B	2	0	0	2	1	1	0	2
	2C	2	3	0	5	3	4	0	7
	2D	7	4	0	11	6	5	0	11
23-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	2	0	0	2
25-Nov	2B	0	0	0	0	0	1	0	1
	2C	1	0	0	1	1	0	0	1
	2D	0	1	0	1	2	2	0	4
29-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	3	1	0	4
	Total	182	265	0	447	92	163	0	255

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 16 - 05. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2005.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
18-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	2	0	2	0	0	0	0
20-Oct	2B	0	3	0	3	0	0	0	0
	2C	0	2	0	2	0	0	0	0
	2D	0	4	0	4	0	1	0	1
24-Oct	2B	3	7	0	10	0	1	0	1
	2C	8	20	0	28	0	1	0	1
	2D	8	12	0	20	0	3	0	3
25-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	3	1	0	4	0	0	0	0
26-Oct	2B	3	4	0	7	3	3	0	6
	2C	12	18	0	30	2	13	0	15
	2D	3	3	0	6	1	8	0	9
27-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	7	9	0	16	5	5	0	10
31-Oct	2B	2	9	1	12	0	2	0	2
	2C	4	13	0	17	1	0	0	1
	2D	8	10	0	18	2	6	0	8
1-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	1	0	1	0	0	0	0
2-Nov	2B	2	6	0	8	2	8	0	10
	2C	9	12	0	21	2	12	0	14
	2D	8	13	0	21	7	2	0	9
3-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	2	3	0	5	0	2	0	2
4-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	1	0	2
7-Nov	2B	2	4	0	6	1	5	0	6
	2C	6	12	0	18	3	5	0	8
	2D	11	15	0	26	6	9	0	15
8-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	3	0	0	3	3	2	0	5
9-Nov	2B	2	1	0	3	3	1	0	4
	2C	1	7	0	8	4	10	0	14
	2D	9	6	0	15	13	11	0	24
11-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
14-Nov	2B	0	1	0	1	1	2	0	3
	2C	0	1	0	1	0	0	0	0
	2D	1	4	0	5	1	4	0	5

Appendix 16 - 05. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2005. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
17-Nov	2B	1	1	0	2	0	0	0	0
	2C	1	2	0	3	0	2	0	2
	2D	3	3	0	6	4	6	0	10
18-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	2	0	3
21-Nov	2B	1	0	0	1	1	1	0	2
	2C	2	1	0	3	0	2	0	2
	2D	4	3	0	7	0	4	0	4
24-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	1	0	1	0	0	0	0
	2D	0	1	0	1	1	2	0	3
	Total	129	215	1	345	68	137	0	205

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 16 - 06. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2006.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
19-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	1	0	0	1	0	0	0	0
23-Oct	2B	0	1	0	1	0	0	0	0
	2C	0	1	0	1	0	0	0	0
	2D	1	4	0	5	0	0	0	0
25-Oct	2B	0	1	0	1	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	2	6	0	8	1	3	0	4
30-Oct	2B	1	3	0	4	0	0	0	0
	2C	1	6	0	7	0	0	0	0
	2D	0	15	0	15	2	3	0	5
2-Nov	2B	1	6	0	7	1	1	0	2
	2C	3	4	0	7	1	6	0	7
	2D	3	11	0	14	0	13	0	13
6-Nov	2B	5	2	0	7	1	5	0	6
	2C	3	7	0	10	2	2	0	4
	2D	5	12	0	17	0	8	0	8
7-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	1	0	1	0	1	0	1
9-Nov	2B	3	5	0	8	1	4	0	5
	2C	5	9	0	14	3	2	0	5
	2D	5	9	0	14	4	9	0	13
10-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	1	0	0	1	1	2	0	3
13-Nov	2B	3	2	0	5	3	1	0	4
	2C	5	5	0	10	1	3	0	4
	2D	5	9	0	14	2	5	0	7
14-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	2	0	2	1	0	0	1
16-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	1	0	1	1	1	0	2
	2D	0	0	0	0	0	0	0	0
20-Nov	2B	1	0	0	1	0	0	0	0
	2C	3	2	0	5	0	0	0	0
	2D	7	6	0	13	2	0	0	2
22-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	2	0	0	2
23-Nov	2B	1	0	0	1	0	0	0	0
	2C	1	1	0	2	1	1	0	2
	2D	0	1	0	1	2	2	0	4

Appendix 16 - 06. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2006. Cont'd

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
27-Nov	2B	0	1	0	1	0	0	0	0
	2C	0	2	0	2	0	1	0	1
	2D	4	8	0	12	0	3	0	3
1-Dec	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	1	0	1
	2D	0	0	0	0	1	2	0	3
	Total	70	143	0	213	33	79	0	112

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 16 - 07. Staple tagging and recovery of tagged Chinook salmon carcasses in the Quinsam River, 2007.

		Tagged				Recovered			
Date	Area (a)	Male	Female	Jack	Total	Male	Female	Jack	Total
15-Oct	2B	0	1	0	1	0	0	0	0
	2C	1	0	0	1	0	0	0	0
	2D	0	3	0	3	0	0	0	0
18-Oct	2B	0	3	0	3	0	0	0	0
	2C	0	1	0	1	0	0	0	0
	2D	2	3	0	5	0	2	0	2
22-Oct	2B	2	1	0	3	0	2	0	2
	2C	1	1	0	2	1	0	0	1
	2D	6	5	0	11	1	1	0	2
25-Oct	2B	4	7	0	11	0	0	0	0
	2C	5	10	0	15	0	0	0	0
	2D	9	16	0	25	1	3	0	4
29-Oct	2B	6	18	0	24	2	6	0	8
	2C	4	8	0	12	3	8	0	11
	2D	13	16	0	29	5	13	0	18
30-Oct	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
1-Nov	2B	7	18	0	25	5	13	0	18
	2C	6	12	0	18	4	7	0	11
	2D	8	17	2	27	11	6	0	17
5-Nov	2B	7	8	0	15	2	12	0	14
	2C	4	8	1	13	3	6	0	9
	2D	8	11	0	19	3	12	1	16
6-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	1	0	0	1
8-Nov	2B	5	22	0	27	4	5	0	9
	2C	1	11	0	12	0	4	0	4
	2D	5	9	0	14	5	9	0	14
13-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	1	0	0	1	1	0	0	1
19-Nov	2B	2	0	0	2	0	0	0	0
	2C	0	0	0	0	1	1	0	2
	2D	2	2	0	4	2	4	0	6
22-Nov	2B	0	1	0	1	0	0	0	0
	2C	1	1	0	2	0	0	0	0
	2D	3	0	0	3	0	0	0	0
23-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	0	0	0
	2D	0	0	0	0	0	1	0	1
26-Nov	2B	2	1	0	3	0	0	0	0
	2C	0	1	0	1	0	0	0	0
	2D	0	2	0	2	1	2	0	3
29-Nov	2B	0	0	0	0	0	0	0	0
	2C	0	0	0	0	0	3	0	3
	2D	0	0	0	0	0	2	0	2
	Total	115	217	3	335	56	123	1	180

(a) See Figure 2 for location of capture and recovery areas.

(b) Carcasses tagged on the Quinsam River but recovered on the Campbell River have been added back into Section 2D.

Appendix 17 - 99. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 1999.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
20-Oct	1	1	1	0	3	3	2	0	0	0	0	0	4	4	3	0
22-Oct	4	4	2	0	12	10	7	2	1	1	0	0	17	15	9	2
26-Oct	13	11	10	2	22	19	18	3	0	0	0	0	35	30	28	5
27-Oct	5	5	3	0	7	5	5	2	1	1	0	0	13	11	8	2
29-Oct	16	10	8	6	40	29	25	11	0	0	0	0	56	39	33	17
2-Nov	28	22	20	6	53	37	35	16	0	0	0	0	81	59	55	22
3-Nov	15	13	13	2	43	36	31	7	0	0	0	0	58	49	44	9
5-Nov	28	17	14	11	46	25	18	21	0	0	0	0	74	42	32	32
9-Nov	18	15	15	3	31	17	17	14	0	0	0	0	49	32	32	17
10-Nov	8	4	4	4	23	14	12	9	0	0	0	0	31	18	16	13
12-Nov	33	28	26	5	45	28	27	17	0	0	0	0	78	56	53	22
16-Nov	14	10	10	4	20	12	8	8	0	0	0	0	34	22	18	12
19-Nov	4	3	3	1	7	2	2	5	0	0	0	0	11	5	5	6
23-Nov	8	8	7	0	9	8	8	1	0	0	0	0	17	16	15	1
26-Nov	7	2	0	5	4	1	0	3	0	0	0	0	11	3	0	8
Total	202	153	136	49	365	246	215	119	2	2	0	0	569	401	351	168
Total for MR (a)	201		136	49	362		215	119								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 17 - 00. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 2000.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
24-Oct	19	19	15	0	37	37	27	0	0	0	0	0	56	56	42	0
25-Oct	2	2	1	0	3	3	2	0	0	0	0	0	5	5	3	0
27-Oct	39	32	24	7	47	33	22	14	0	0	0	0	86	65	46	21
31-Oct	45	38	31	7	63	52	46	11	0	0	0	0	108	90	77	18
1-Nov	5	5	4	0	5	4	4	1	0	0	0	0	10	9	8	1
3-Nov	50	28	22	22	64	30	22	34	0	0	0	0	114	58	44	56
7-Nov	18	11	7	7	28	16	11	12	0	0	0	0	46	27	18	19
10-Nov	12	6	0	6	8	2	0	6	0	0	0	0	20	8	0	12
14-Nov	15	9	6	6	26	20	10	6	0	0	0	0	41	29	16	12
17-Nov	9	6	3	3	11	3	2	8	0	0	0	0	20	9	5	11
21-Nov	11	8	1	3	4	3	0	1	0	0	0	0	15	11	1	4
24-Nov	5	5	0	0	1	0	0	1	0	0	0	0	6	5	0	1
28-Nov	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
Total	231	169	114	62	297	203	146	94	0	0	0	0	528	372	260	156
Total for MR (a)	212		114	62	260		146	94								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 17 - 01. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 2001.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
23-Oct	16	16	6	0	26	26	13	0	0	0	0	0	42	42	19	0
24-Oct	1	1	0	0	4	4	2	0	0	0	0	0	5	5	2	0
26-Oct	16	13	8	3	28	22	8	6	1	1	1	0	45	36	17	9
30-Oct	16	13	5	3	23	16	8	7	0	0	0	0	39	29	13	10
31-Oct	58	58	25	0	68	67	21	1	0	0	0	0	126	125	46	1
2-Nov	39	28	12	11	41	28	15	13	0	0	0	0	80	56	27	24
7-Nov	21	18	9	3	27	19	6	8	0	0	0	0	48	37	15	11
9-Nov	28	19	11	9	23	16	14	7	0	0	0	0	51	35	25	16
13-Nov	6	2	0	4	11	4	1	7	0	0	0	0	17	6	1	11
14-Nov	7	6	1	1	10	7	4	3	0	0	0	0	17	13	5	4
15-Nov	2	0	0	2	1	0	0	1	0	0	0	0	3	0	0	3
16-Nov	11	11	8	0	5	5	3	0	0	0	0	0	16	16	11	0
20-Nov	5	4	0	1	1	1	0	0	0	0	0	0	6	5	0	1
21-Nov	11	10	5	1	0	0	0	0	0	0	0	0	11	10	5	1
23-Nov	7	4	2	3	3	2	1	1	0	0	0	0	10	6	3	4
3-Dec	7	5	0	2	0	0	0	0	0	0	0	0	7	5	0	2
Total	251	208	92	43	271	217	96	54	1	1	1	0	523	426	189	97
Total for MR (a)	235		92	43	245		96	54								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 17 - 02. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 2002.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
18-Oct	14	14	5	0	18	18	10	0	0	0	0	0	32	32	15	0
22-Oct	18	17	8	1	23	19	10	4	0	0	0	0	41	36	18	5
23-Oct	10	9	2	1	17	14	8	3	0	0	0	0	27	23	10	4
24-Oct	0	0	0	0	4	0	0	4	0	0	0	0	4	0	0	4
25-Oct	46	41	18	5	48	40	17	8	0	0	0	0	94	81	35	13
29-Oct	51	41	14	10	53	44	22	9	0	0	0	0	104	85	36	19
30-Oct	18	14	3	4	11	8	5	3	0	0	0	0	29	22	8	7
1-Nov	49	36	14	13	60	46	21	14	0	0	0	0	109	82	35	27
5-Nov	36	29	14	7	41	30	12	11	0	0	0	0	77	59	26	18
6-Nov	14	11	7	3	30	26	19	4	0	0	0	0	44	37	26	7
8-Nov	11	6	3	5	10	5	4	5	0	0	0	0	21	11	7	10
12-Nov	9	6	3	3	17	13	8	4	0	0	0	0	26	19	11	7
13-Nov	21	14	10	7	24	20	15	4	0	0	0	0	45	34	25	11
15-Nov	28	18	6	10	40	21	10	19	0	0	0	0	68	39	16	29
19-Nov	18	18	11	0	21	18	6	3	0	0	0	0	39	36	17	3
22-Nov	26	15	3	11	41	33	2	8	0	0	0	0	67	48	5	19
26-Nov	2	2	1	0	4	2	0	2	0	0	0	0	6	4	1	2
29-Nov	3	2	0	1	6	5	0	1	0	0	0	0	9	7	0	2
Total	374	293	122	81	468	362	169	106	0	0	0	0	842	655	291	187
Total for MR (a)	360		122	81	450		169	106								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 17 - 03. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 2003.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
21-Oct	0	0	0	0	2	2	2	0	0	0	0	0	2	2	2	0
23-Oct	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0
24-Oct	10	10	2	0	24	24	10	0	0	0	0	0	34	34	12	0
28-Oct	3	3	0	0	8	8	5	0	0	0	0	0	11	11	5	0
29-Oct	45	43	21	2	52	52	19	0	0	0	0	0	97	95	40	2
31-Oct	31	23	12	8	43	26	10	17	0	0	0	0	74	49	22	25
3-Nov	22	14	6	8	28	21	9	7	0	0	0	0	50	35	15	15
5-Nov	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
7-Nov	25	19	7	6	20	13	1	7	0	0	0	0	45	32	8	13
10-Nov	9	6	4	3	12	9	6	3	0	0	0	0	21	15	10	6
14-Nov	10	7	3	3	9	3	0	6	0	0	0	0	19	10	3	9
18-Nov	9	8	2	1	9	8	0	1	0	0	0	0	18	16	2	2
21-Nov	8	4	0	4	2	2	1	0	0	0	0	0	10	6	1	4
26-Nov	1	0	0	1	1	1	0	0	0	0	0	0	2	1	0	1
Total	174	138	57	36	211	169	63	42	0	0	0	0	385	307	120	78
Total for MR (a)	163		57	36	209		63	42								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 17 - 04. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 2004.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
14-Oct	1	1	0	0	1	1	1	0	0	0	0	0	2	2	1	0
15-Oct	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0
19-Oct	4	4	3	0	8	7	1	1	0	0	0	0	12	11	4	1
22-Oct	13	13	5	0	14	14	6	0	0	0	0	0	27	27	11	0
26-Oct	29	26	9	3	47	45	23	2	0	0	0	0	76	71	32	5
27-Oct	11	10	3	1	20	19	8	1	0	0	0	0	31	29	11	2
29-Oct	26	23	14	3	45	30	9	15	0	0	0	0	71	53	23	18
2-Nov	14	13	6	1	19	17	6	2	0	0	0	0	33	30	12	3
3-Nov	39	36	18	3	45	38	18	7	0	0	0	0	84	74	36	10
8-Nov	36	33	13	3	20	14	8	6	0	0	0	0	56	47	21	9
10-Nov	16	15	6	1	11	11	3	0	0	0	0	0	27	26	9	1
12-Nov	24	19	6	5	19	12	5	7	0	0	0	0	43	31	11	12
16-Nov	4	2	1	2	3	1	0	2	0	0	0	0	7	3	1	4
19-Nov	5	1	0	4	4	4	1	0	0	0	0	0	9	5	1	4
23-Nov	16	13	0	3	13	12	0	1	0	0	0	0	29	25	0	4
Total	239	210	84	29	269	225	89	44	0	0	0	0	508	435	173	73
Total for MR (a)	233		84	29	268		89	44								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 17 - 05. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 2005.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
17-Oct	1	1	0	0	6	6	3	0	0	0	0	0	7	7	3	0
21-Oct	4	4	2	0	14	13	6	1	0	0	0	0	18	17	8	1
25-Oct	11	11	5	0	13	12	7	1	0	0	0	0	24	23	12	1
26-Oct	11	11	4	0	11	11	6	0	0	0	0	0	22	22	10	0
28-Oct	24	17	6	7	23	15	9	8	0	0	0	0	47	32	15	15
1-Nov	20	18	8	2	28	19	12	9	0	0	0	0	48	37	20	11
4-Nov	24	18	10	6	22	18	11	4	0	0	0	0	46	36	21	10
8-Nov	10	7	3	3	8	3	2	5	0	0	0	0	18	10	5	8
10-Nov	9	9	5	0	4	4	1	0	0	0	0	0	13	13	6	0
11-Nov	4	3	2	1	3	2	0	1	0	0	0	0	7	5	2	2
15-Nov	6	4	3	2	1	0	0	1	0	0	0	0	7	4	3	3
18-Nov	9	7	4	2	6	5	0	1	0	0	0	0	15	12	4	3
22-Nov	4	2	1	2	0	0	0	0	0	0	0	0	4	2	1	2
Total	137	112	53	25	139	108	57	31	0	0	0	0	276	220	110	56
Total for MR (a)	132		53	25	133		57	31								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 17 - 06. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 2006.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
16-Oct	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0
18-Oct	1	1	1	0	5	5	3	0	0	0	0	0	6	6	4	0
20-Oct	1	1	0	0	1	1	0	0	0	0	0	0	2	2	0	0
23-Oct	4	3	1	1	11	11	5	0	0	0	0	0	15	14	6	1
24-Oct	10	10	7	0	18	17	9	1	0	0	0	0	28	27	16	1
26-Oct	7	6	3	1	19	13	7	6	0	0	0	0	26	19	10	7
27-Oct	15	12	5	3	10	9	6	1	0	0	0	0	25	21	11	4
31-Oct	29	24	13	5	50	43	29	7	0	0	0	0	79	67	42	12
1-Nov	31	29	17	2	51	48	25	3	0	0	0	0	82	77	42	5
3-Nov	61	40	20	21	110	70	34	40	0	0	0	0	171	110	54	61
7-Nov	61	49	25	12	62	50	21	12	0	0	0	0	123	99	46	24
8-Nov	8	5	3	3	20	15	8	5	0	0	0	0	28	20	11	8
10-Nov	18	8	5	10	23	13	10	10	0	0	0	0	41	21	15	20
14-Nov	45	40	17	5	57	49	17	8	0	0	0	0	102	89	34	13
16-Nov	16	12	5	4	7	6	2	1	0	0	0	0	23	18	7	5
17-Nov	13	8	2	5	12	8	3	4	0	0	0	0	25	16	5	9
21-Nov	2	2	1	0	2	2	1	0	0	0	0	0	4	4	2	0
22-Nov	15	11	3	4	13	10	0	3	0	0	0	0	28	21	3	7
24-Nov	2	1	1	1	9	8	2	1	0	0	0	0	11	9	3	2
Total	339	262	129	77	481	379	183	102	0	0	0	0	820	641	312	179
Total for MR (a)	338		129	77	480		183	102								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 17 - 07. Sequential mark-recapture data for Chinook salmon carcasses in the Campbell River, 2007.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
16-Oct	0	0	0	0	7	7	3	0	0	0	0	0	7	7	3	0
19-Oct	4	4	3	0	11	9	6	2	0	0	0	0	15	13	9	2
23-Oct	13	12	7	1	23	20	15	3	0	0	0	0	36	32	22	4
24-Oct	10	10	2	0	7	7	4	0	0	0	0	0	17	17	6	0
26-Oct	29	24	13	5	32	24	11	8	0	0	0	0	61	48	24	13
30-Oct	34	26	14	8	39	31	16	8	0	0	0	0	73	57	30	16
2-Nov	21	15	6	6	31	22	11	9	0	0	0	0	52	37	17	15
6-Nov	25	17	10	8	32	26	18	6	0	0	0	0	57	43	28	14
9-Nov	10	8	5	2	20	9	6	11	0	0	0	0	30	17	11	13
15-Nov	1	1	0	0	3	0	0	3	0	0	0	0	4	1	0	3
20-Nov	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
23-Nov	5	5	0	0	6	6	0	0	0	0	0	0	11	11	0	0
Total	153	122	60	31	211	161	90	50	0	0	0	0	364	283	150	81
Total for MR (a)	149		60	31	204		90	50								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 99. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 1999.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
18-Oct	2	2	0	0	2	2	2	0	0	0	0	0	4	4	2	0
19-Oct	5	5	1	0	10	10	3	0	0	0	0	0	15	15	4	0
21-Oct	11	10	3	1	16	14	6	2	0	0	0	0	27	24	9	3
25-Oct	23	20	12	3	15	13	9	2	0	0	0	0	38	33	21	5
27-Oct	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
28-Oct	20	16	6	4	14	13	5	1	0	0	0	0	34	29	11	5
1-Nov	50	46	25	4	64	58	32	6	2	2	2	0	116	106	59	10
3-Nov	0	0	0	0	2	0	0	2	0	0	0	0	2	0	0	2
4-Nov	73	60	30	13	96	77	36	19	3	2	0	1	172	139	66	33
8-Nov	54	46	15	8	63	55	21	8	3	3	0	0	120	104	36	16
9-Nov	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
10-Nov	2	2	1	0	0	0	0	0	0	0	0	0	2	2	1	0
11-Nov	43	36	16	7	33	26	13	7	1	1	1	0	77	63	30	14
12-Nov	0	0	0	0	3	0	0	3	0	0	0	0	3	0	0	3
15-Nov	85	73	35	12	75	66	32	9	0	0	0	0	160	139	67	21
16-Nov	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
18-Nov	65	45	36	20	50	30	25	20	0	0	0	0	115	75	61	40
22-Nov	68	42	26	26	58	37	26	21	0	0	0	0	126	79	52	47
23-Nov	1	0	0	1	2	0	0	2	0	0	0	0	3	0	0	3
25-Nov	51	29	13	22	37	17	13	20	0	0	0	0	88	46	26	42
29-Nov	17	10	8	7	6	4	2	2	0	0	0	0	23	14	10	9
2-Dec	2	2	0	0	3	1	0	2	0	0	0	0	5	3	0	2
Total	573	444	227	129	551	423	225	128	9	8	3	1	1,133	875	455	258
Total for MR (a)	566		227	129	549		225	128								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 00. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 2000.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
23-Oct	11	11	2	0	2	2	1	0	0	0	0	0	13	13	3	0
25-Oct	3	3	0	0	9	9	3	0	0	0	0	0	12	12	3	0
26-Oct	49	48	9	1	43	41	15	2	0	0	0	0	92	89	24	3
30-Oct	108	105	27	3	139	132	25	7	5	5	0	0	252	242	52	10
31-Oct	1	0	0	1	1	0	0	1	0	0	0	0	2	0	0	2
1-Nov	38	36	9	2	49	46	9	3	0	0	0	0	87	82	18	5
2-Nov	182	158	35	24	212	193	43	19	0	0	0	0	394	351	78	43
3-Nov	6	6	1	0	8	8	2	0	0	0	0	0	14	14	3	0
6-Nov	253	233	51	20	321	286	62	35	5	5	3	0	579	524	116	55
7-Nov	69	59	14	10	85	78	16	7	0	0	0	0	154	137	30	17
9-Nov	260	208	38	52	316	246	63	70	0	0	0	0	576	454	101	122
10-Nov	3	0	0	3	2	0	0	2	0	0	0	0	5	0	0	5
13-Nov	113	88	19	25	180	138	32	42	0	0	0	0	293	226	51	67
14-Nov	21	20	4	1	21	13	3	8	0	0	0	0	42	33	7	9
16-Nov	119	96	22	23	144	111	22	33	0	0	0	0	263	207	44	56
17-Nov	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
20-Nov	59	45	8	14	66	50	12	16	1	1	0	0	126	96	20	30
23-Nov	32	26	5	6	40	27	8	13	1	1	0	0	73	54	13	19
27-Nov	16	14	3	2	21	20	5	1	0	0	0	0	37	34	8	3
30-Nov	14	13	0	1	11	10	0	1	0	0	0	0	25	23	0	2
Total	1,357	1,169	247	188	1,671	1,410	321	261	12	12	3	0	3,040	2,591	571	449
Total for MR (a)	1,346		247	188	1,669		321	261								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 01. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 2001.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
19-Oct	37	37	5	0	48	48	6	0	0	0	0	0	85	85	11	0
22-Oct	48	47	8	1	76	74	10	2	3	3	0	0	127	124	18	3
24-Oct	58	57	9	1	62	59	9	3	0	0	0	0	120	116	18	4
25-Oct	163	157	18	6	181	172	31	9	0	0	0	0	344	329	49	15
26-Oct	44	40	4	4	31	24	5	7	0	0	0	0	75	64	9	11
29-Oct	227	216	22	11	243	230	26	13	0	0	0	0	470	446	48	24
30-Oct	143	137	21	6	145	139	27	6	0	0	0	0	288	276	48	12
31-Oct	91	82	15	9	107	99	17	8	0	0	0	0	198	181	32	17
1-Nov	287	257	50	30	295	262	41	33	0	0	0	0	582	519	91	63
2-Nov	17	16	2	1	15	12	2	3	0	0	0	0	32	28	4	4
5-Nov	350	334	64	16	391	370	60	21	1	1	0	0	742	705	124	37
6-Nov	451	422	73	29	397	368	67	29	3	3	0	0	851	793	140	58
7-Nov	147	120	19	27	163	128	24	35	1	1	0	0	311	249	43	62
8-Nov	380	290	56	90	338	251	39	87	1	1	0	0	719	542	95	177
9-Nov	7	5	1	2	9	6	1	3	3	3	0	0	19	14	2	5
12-Nov	342	305	32	37	301	265	18	36	1	1	0	0	644	571	50	73
13-Nov	134	122	11	12	77	67	5	10	0	0	0	0	211	189	16	22
14-Nov	77	61	4	16	68	60	6	8	0	0	0	0	145	121	10	24
15-Nov	30	24	1	6	11	8	1	3	0	0	0	0	41	32	2	9
19-Nov	89	76	5	13	84	77	9	7	0	0	0	0	173	153	14	20
27-Nov	54	49	4	5	48	43	4	5	0	0	0	0	102	92	8	10
29-Nov	20	17	0	3	12	10	0	2	0	0	0	0	32	27	0	5
Total	3,196	2,871	424	325	3,102	2,772	408	330	13	13	0	0	6,311	5,656	832	655
Total for MR (a)	3,159		424	325	3,054		408	330								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 02. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 2002.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
15-Oct	7	7	0	0	5	5	0	0	0	0	0	0	12	12	0	0
17-Oct	14	14	1	0	18	18	0	0	1	1	1	0	33	33	2	0
21-Oct	53	53	5	0	63	63	4	0	0	0	0	0	116	116	9	0
22-Oct	72	72	3	0	127	127	13	0	1	1	1	0	200	200	17	0
23-Oct	81	76	3	5	112	108	12	4	0	0	0	0	193	184	15	9
24-Oct	80	78	6	2	103	92	9	11	4	3	0	1	187	173	15	14
28-Oct	415	411	38	4	648	635	60	13	3	3	1	0	1066	1049	99	17
29-Oct	144	141	13	3	193	188	17	5	0	0	0	0	337	329	30	8
30-Oct	154	130	9	24	242	207	21	35	0	0	0	0	396	337	30	59
31-Oct	211	193	18	18	247	217	18	30	1	0	0	1	459	410	36	49
4-Nov	399	378	45	21	653	619	87	34	0	0	0	0	1052	997	132	55
5-Nov	67	62	7	5	136	132	25	4	0	0	0	0	203	194	32	9
6-Nov	88	67	12	21	186	142	23	44	1	1	1	0	275	210	36	65
7-Nov	143	127	25	16	161	118	17	43	0	0	0	0	304	245	42	59
11-Nov	131	122	18	9	228	207	41	21	0	0	0	0	359	329	59	30
12-Nov	59	55	7	4	51	49	12	2	0	0	0	0	110	104	19	6
13-Nov	1	0	0	1	1	0	0	1	0	0	0	0	2	0	0	2
14-Nov	57	51	11	6	134	116	20	18	0	0	0	0	191	167	31	24
15-Nov	1	0	0	1	1	0	0	1	0	0	0	0	2	0	0	2
18-Nov	38	35	4	3	65	60	13	5	0	0	0	0	103	95	17	8
19-Nov	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
21-Nov	58	49	7	9	99	79	17	20	0	0	0	0	157	128	24	29
22-Nov	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
25-Nov	49	40	9	9	105	84	12	21	0	0	0	0	154	124	21	30
28-Nov	22	12	0	10	45	37	6	8	0	0	0	0	67	49	6	18
4-Dec	5	5	0	0	27	19	0	8	0	0	0	0	32	24	0	8
Total	2,350	2,178	241	172	3,651	3,322	427	329	11	9	4	2	6,012	5,509	672	503
Total for MR (a)	2,329		241	172	3,565		427	329								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 03. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 2003.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
20-Oct	7	7	1	0	6	6	1	0	0	0	0	0	13	13	2	0
21-Oct	4	4	0	0	7	7	2	0	0	0	0	0	11	11	2	0
23-Oct	23	22	3	1	77	76	13	1	1	1	1	0	101	99	17	2
27-Oct	68	68	17	0	165	163	57	2	0	0	0	0	233	231	74	2
28-Oct	83	83	32	0	136	131	35	5	0	0	0	0	219	214	67	5
29-Oct	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
30-Oct	186	177	35	9	320	279	51	41	0	0	0	0	506	456	86	50
3-Nov	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
4-Nov	263	245	22	18	319	276	22	43	0	0	0	0	582	521	44	61
5-Nov	136	123	7	13	105	87	12	18	0	0	0	0	241	210	19	31
7-Nov	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
12-Nov	137	116	79	21	156	125	84	31	0	0	0	0	293	241	163	52
13-Nov	9	6	3	3	11	6	2	5	1	1	1	0	21	13	6	8
17-Nov	126	75	45	51	112	54	22	58	0	0	0	0	238	129	67	109
20-Nov	78	45	27	33	62	35	25	27	0	0	0	0	140	80	52	60
25-Nov	31	22	15	9	22	7	4	15	0	0	0	0	53	29	19	24
27-Nov	15	9	0	6	10	1	0	9	0	0	0	0	25	10	0	15
Total	1,168	1,002	286	166	1,509	1,253	330	256	2	2	2	0	2,679	2,257	618	422
Total for MR (a)	1,161		286	166	1,503		330	256								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 04. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 2004.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
13-Oct	1	1	0	0	9	9	1	0	0	0	0	0	10	10	1	0
18-Oct	24	24	4	0	60	60	11	0	1	1	0	0	85	85	15	0
20-Oct	19	19	2	0	35	34	7	1	0	0	0	0	54	53	9	1
21-Oct	14	13	3	1	54	50	8	4	0	0	0	0	68	63	11	5
25-Oct	75	75	13	0	169	166	32	3	1	1	0	0	245	242	45	3
27-Oct	28	27	3	1	58	47	11	11	1	1	0	0	87	75	14	12
28-Oct	82	78	13	4	122	110	22	12	0	0	0	0	204	188	35	16
29-Oct	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
1-Nov	161	159	26	2	244	238	45	6	0	0	0	0	405	397	71	8
2-Nov	136	124	23	12	165	149	26	16	0	0	0	0	301	273	49	28
3-Nov	0	0	0	0	4	0	0	4	0	0	0	0	4	0	0	4
4-Nov	200	180	31	20	250	208	39	42	0	0	0	0	450	388	70	62
5-Nov	120	117	16	3	88	79	21	9	0	0	0	0	208	196	37	12
9-Nov	127	118	20	9	124	106	22	18	0	0	0	0	251	224	42	27
10-Nov	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
11-Nov	85	66	14	19	76	58	9	18	0	0	0	0	161	124	23	37
12-Nov	4	3	0	1	3	1	0	2	0	0	0	0	7	4	0	3
15-Nov	14	14	1	0	8	8	0	0	0	0	0	0	22	22	1	0
18-Nov	9	9	1	0	16	15	3	1	0	0	0	0	25	24	4	1
19-Nov	1	0	0	1	1	0	0	1	0	0	0	0	2	0	0	2
22-Nov	71	61	11	10	62	52	7	10	0	0	0	0	133	113	18	20
23-Nov	2	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2
25-Nov	10	7	1	3	13	10	1	3	0	0	0	0	23	17	2	6
29-Nov	10	7	0	3	11	10	0	1	0	0	0	0	21	17	0	4
Total	1,194	1,102	182	92	1,573	1,410	265	163	3	3	0	0	2,770	2,515	447	255
Total for MR (a)	1,169		182	92	1,564		265	163								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 05. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 2005.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
18-Oct	3	3	0	0	7	7	2	0	0	0	0	0	10	10	2	0
20-Oct	14	14	0	0	23	22	9	1	0	0	0	0	37	36	9	1
24-Oct	62	62	19	0	173	168	39	5	0	0	0	0	235	230	58	5
25-Oct	17	17	3	0	13	13	1	0	0	0	0	0	30	30	4	0
26-Oct	98	92	18	6	169	145	25	24	1	1	0	0	268	238	43	30
27-Oct	49	44	7	5	46	41	9	5	0	0	0	0	95	85	16	10
31-Oct	115	112	14	3	171	163	32	8	1	1	1	0	287	276	47	11
1-Nov	3	3	0	0	5	5	1	0	0	0	0	0	8	8	1	0
2-Nov	104	93	19	11	199	177	31	22	0	0	0	0	303	270	50	33
3-Nov	12	12	2	0	21	19	3	2	0	0	0	0	33	31	5	2
4-Nov	1	0	0	1	1	0	0	1	0	0	0	0	2	0	0	2
7-Nov	120	110	19	10	195	176	31	19	0	0	0	0	315	286	50	29
8-Nov	13	10	3	3	10	8	0	2	0	0	0	0	23	18	3	5
9-Nov	82	62	12	20	101	79	14	22	0	0	0	0	183	141	26	42
11-Nov	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
14-Nov	16	14	1	2	30	24	6	6	0	0	0	0	46	38	7	8
17-Nov	32	28	5	4	44	36	6	8	0	0	0	0	76	64	11	12
18-Nov	1	0	0	1	2	0	0	2	0	0	0	0	3	0	0	3
21-Nov	36	35	7	1	40	33	4	7	0	0	0	0	76	68	11	8
24-Nov	4	3	0	1	10	8	2	2	0	0	0	0	14	11	2	3
28-Nov	1	1	0	0	3	3	0	0	0	0	0	0	4	4	0	0
Total	783	715	129	68	1,264	1,127	215	137	2	2	1	0	2,049	1,844	345	205
Total for MR (a)	704		129	68	1,257		215	137								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).
(b) New Examined = Untagged carcass recoveries
(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 06. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 2006.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
17-Oct	2	2	0	0	9	9	0	0	0	0	0	0	11	11	0	0
19-Oct	2	2	1	0	10	10	0	0	0	0	0	0	12	12	1	0
23-Oct	9	9	1	0	68	68	6	0	0	0	0	0	77	77	7	0
25-Oct	21	20	2	1	87	84	7	3	0	0	0	0	108	104	9	4
30-Oct	81	79	2	2	225	222	24	3	2	2	0	0	308	303	26	5
2-Nov	119	117	7	2	232	212	21	20	2	2	0	0	353	331	28	22
6-Nov	140	137	13	3	248	233	21	15	2	2	0	0	390	372	34	18
7-Nov	3	3	0	0	6	5	1	1	0	0	0	0	9	8	1	1
9-Nov	169	161	13	8	260	245	23	15	1	1	0	0	430	407	36	23
10-Nov	8	7	1	1	17	15	0	2	0	0	0	0	25	22	1	3
13-Nov	160	154	13	6	164	155	16	9	0	0	0	0	324	309	29	15
14-Nov	13	12	0	1	12	12	2	0	1	1	0	0	26	25	2	1
16-Nov	8	7	0	1	20	19	1	1	0	0	0	0	28	26	1	2
20-Nov	37	35	11	2	28	28	8	0	0	0	0	0	65	63	19	2
22-Nov	2	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2
23-Nov	10	7	2	3	9	6	2	3	0	0	0	0	19	13	4	6
27-Nov	25	25	4	0	43	39	11	4	0	0	0	0	68	64	15	4
1-Dec	18	17	0	1	33	30	0	3	1	1	0	0	52	48	0	4
Total	827	794	70	33	1,471	1,392	143	79	9	9	0	0	2,307	2,195	213	112
Total for MR (a)	823		70	33	1,384		143	79								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 18 - 07. Sequential mark-recapture data for Chinook salmon carcasses in the Quinsam River, 2007.

	Male				Female				Jack				Total			
Date	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered	Total Examined	New Examined	Tags Applied	Tags Recovered
15-Oct	16	16	1	0	17	17	4	0	0	0	0	0	33	33	5	0
18-Oct	15	15	2	0	37	35	7	2	0	0	0	0	52	50	9	2
22-Oct	35	33	9	2	36	33	7	3	0	0	0	0	71	66	16	5
25-Oct	39	38	18	1	73	70	33	3	0	0	0	0	112	108	51	4
29-Oct	81	71	23	10	147	120	42	27	0	0	0	0	228	191	65	37
30-Oct	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
1-Nov	79	59	21	20	146	120	47	26	2	2	2	0	227	181	70	46
5-Nov	65	57	19	8	132	102	27	30	2	1	1	1	199	160	47	39
6-Nov	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
8-Nov	34	25	11	9	85	67	42	18	0	0	0	0	119	92	53	27
13-Nov	3	2	1	1	0	0	0	0	0	0	0	0	3	2	1	1
16-Nov	1	1	0	0	1	1	0	0	0	0	0	0	2	2	0	0
19-Nov	16	13	4	3	24	19	2	5	0	0	0	0	40	32	6	8
22-Nov	9	9	4	0	5	5	2	0	0	0	0	0	14	14	6	0
23-Nov	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
26-Nov	5	4	2	1	9	7	4	2	0	0	0	0	14	11	6	3
29-Nov	3	3	0	0	7	2	0	5	0	0	0	0	10	5	0	5
Total	402	346	115	56	721	598	217	123	4	3	3	1	1,127	947	335	180
Total for MR (a)	386		115	56	704		217	123								

(a) To be used in the Petersen estimate calculation. Carcasses examined on or before the first day of tagging are not included in the total for the mark-recapture estimate (MR).

(b) New Examined = Untagged carcass recoveries

(c) Total Examined = New Examined + Tags Recovered

Appendix 19 - 99. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 1999.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
20-Oct	0	2	0	2		0	1	0	1	1	1	0	2		0	0	0	0
22-Oct	0	2	1	3		0	0	0	0	4	8	0	12		0	0	0	0
26-Oct	2	1	0	3		0	0	0	0	8	9	0	17		0	1	0	1
27-Oct	0	0	0	0		0	0	0	0	3	2	1	6		1	0	0	1
29-Oct	6	15	0	21		0	1	0	1	2	7	0	9		0	1	0	1
2-Nov	3	13	0	16		0	0	0	0	17	14	0	31		1	0	0	1
3-Nov	2	6	0	8		0	1	0	1	9	27	0	36		0	4	0	4
5-Nov	4	9	0	13		0	2	0	2	13	16	0	29		1	1	0	2
9-Nov	3	8	0	11		0	0	0	0	12	7	0	19		0	0	0	0
10-Nov	2	4	0	6		0	0	0	0	1	1	0	2		0	1	0	1
12-Nov	0	1	0	1		0	0	0	0	26	23	0	49		1	1	0	2
16-Nov	1	1	0	2		0	0	0	0	8	10	0	18		0	2	0	2
19-Nov	0	1	0	1		0	0	0	0	1	0	0	1		0	0	0	0
23-Nov	0	0	0	0		0	0	0	0	7	7	0	14		1	0	0	1
26-Nov	2	1	0	3		0	0	0	0	0	0	0	0		0	0	0	0
Total	25	64	1	90		0	5	0	5	112	132	1	245		5	11	0	16

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 19 - 00. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 2000.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
24-Oct	7	13	0	20		0	5	0	5	9	19	0	28		1	0	0	1
27-Oct	3	10	0	13		0	0	0	0	27	16	0	43		2	1	0	3
31-Oct	7	14	0	21		0	1	0	1	21	27	0	48		1	2	0	3
1-Nov	0	3	0	3		0	0	0	0	4	1	0	5		0	0	0	0
3-Nov	3	11	0	14		0	2	0	2	25	15	0	40		1	0	0	1
7-Nov	2	9	0	11		0	0	0	0	8	7	0	15		1	0	0	1
10-Nov	0	0	0	0		0	0	0	0	6	2	0	8		0	0	0	0
14-Nov	1	5	0	6		0	0	0	0	7	14	0	21		0	1	0	1
17-Nov	0	2	0	2		0	0	0	0	6	1	0	7		0	0	0	0
21-Nov	0	0	0	0		0	0	0	0	8	3	0	11		0	0	0	0
24-Nov	2	0	0	2		0	0	0	0	3	0	0	3		0	0	0	0
Total	25	67	0	92		0	8	0	8	124	105	0	229		6	4	0	10

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 19 - 01. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 2001.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
23-Oct	8	5	0	13		0	0	0	0	3	8	0	11		0	0	0	0
24-Oct	0	0	0	0		0	0	0	0	1	4	0	5		0	1	0	1
26-Oct	5	11	1	17		0	0	0	0	0	1	0	1		0	0	0	0
30-Oct	5	7	0	12		0	1	0	1	0	1	0	1		0	0	0	0
31-Oct	0	0	0	0		0	0	0	0	56	66	0	122		3	4	0	7
2-Nov	5	8	0	13		0	0	0	0	14	13	0	27		1	1	0	2
7-Nov	6	6	0	12		0	0	0	0	10	10	0	20		3	1	0	4
9-Nov	1	3	0	4		0	0	0	0	18	11	0	29		0	0	0	0
13-Nov	0	0	0	0		0	0	0	0	1	3	0	4		0	0	0	0
14-Nov	0	1	0	1		0	0	0	0	6	6	0	12		0	0	0	0
16-Nov	1	1	0	2		0	0	0	0	10	4	0	14		1	1	0	2
20-Nov	1	0	0	1		0	0	0	0	3	1	0	4		0	0	0	0
21-Nov	0	0	0	0		0	0	0	0	10	0	0	10		0	0	0	0
23-Nov	0	0	0	0		0	0	0	0	4	2	0	6		1	0	0	1
3-Dec	0	0	0	0		0	0	0	0	5	0	0	5		1	0	0	1
Total	32	42	1	75		0	1	0	1	141	130	0	271		10	8	0	18

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 19 - 02. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 2002.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
18-Oct	4	0	0	4		0	0	0	0	6	13	0	19		0	0	0	0
22-Oct	0	4	0	4		0	1	0	1	12	11	0	23		0	0	0	0
23-Oct	4	5	0	9		0	0	0	0	4	6	0	10		0	0	0	0
25-Oct	4	2	0	6		0	0	0	0	19	22	0	41		1	0	0	1
29-Oct	5	8	0	13		1	1	0	2	21	22	0	43		1	3	0	4
30-Oct	4	0	0	4		0	0	0	0	10	8	0	18		0	0	0	0
1-Nov	6	12	0	18		0	1	0	1	19	21	0	40		2	0	0	2
5-Nov	2	6	0	8		0	1	0	1	15	10	0	25		1	0	0	1
6-Nov	2	5	0	7		0	0	0	0	7	14	0	21		0	2	0	2
8-Nov	3	2	0	5		0	0	0	0	3	3	0	6		0	0	0	0
12-Nov	5	12	0	17		0	2	0	2	1	1	0	2		0	0	0	0
13-Nov	0	0	0	0		0	0	0	0	13	19	0	32		1	3	0	4
15-Nov	3	2	0	5		0	0	0	0	15	16	0	31		1	2	0	3
19-Nov	0	2	0	2		0	0	0	0	18	16	0	34		0	2	0	2
22-Nov	1	2	0	3		0	0	0	0	14	31	0	45		2	0	0	2
26-Nov	0	0	0	0		0	0	0	0	2	2	0	4		0	0	0	0
29-Nov	0	0	0	0		0	0	0	0	2	3	0	5		0	0	0	0
Total	43	62	0	105		1	6	0	7	181	218	0	399		9	12	0	21

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 19 - 03. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 2003.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
21-Oct	0	0	0	0		0	0	0	0	0	2	0	2		0	0	0	0
23-Oct	1	0	0	1		0	0	0	0	0	0	0	0		0	0	0	0
24-Oct	0	2	0	2		0	0	0	0	10	20	0	30		0	1	0	1
28-Oct	3	8	0	11		0	0	0	0	0	0	0	0		0	0	0	0
29-Oct	3	3	0	6		0	0	0	0	37	42	0	79		2	1	0	3
31-Oct	2	8	0	10		0	0	0	0	15	9	0	24		2	0	0	2
3-Nov	0	1	0	1		0	0	0	0	12	15	0	27		0	1	0	1
7-Nov	4	2	0	6		0	0	0	0	14	9	0	23		0	1	0	1
10-Nov	1	1	0	2		0	0	0	0	4	4	0	8		1	0	0	1
14-Nov	1	2	0	3		0	0	0	0	6	1	0	7		1	0	0	1
18-Nov	1	0	0	1		0	0	0	0	7	8	0	15		0	0	0	0
21-Nov	0	0	0	0		0	0	0	0	4	2	0	6		0	0	0	0
26-Nov	0	0	0	0		0	0	0	0	0	1	0	1		0	0	0	0
Total	16	27	0	43		0	0	0	0	109	113	0	222		6	4	0	10

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 19 - 04. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 2004.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
14-Oct	1	1	0	2		0	0	0	0	0	0	0	0		0	0	0	0
19-Oct	0	1	0	1		0	0	0	0	4	6	0	10		0	1	0	1
22-Oct	4	3	0	7		0	0	0	0	6	7	0	13		1	0	0	1
26-Oct	5	9	0	14		0	1	0	1	13	21	0	34		1	0	0	1
27-Oct	0	0	0	0		0	0	0	0	10	19	0	29		2	2	0	4
29-Oct	1	2	0	3		0	0	0	0	16	23	0	39		0	1	0	1
2-Nov	0	0	0	0		0	0	0	0	13	17	0	30		1	0	0	1
3-Nov	8	6	0	14		1	0	0	1	23	23	0	46		3	1	0	4
8-Nov	3	3	0	6		0	0	0	0	26	10	0	36		1	1	0	2
10-Nov	0	0	0	0		0	0	0	0	15	11	0	26		0	1	0	1
12-Nov	2	8	0	10		0	0	0	0	17	4	0	21		2	0	0	2
16-Nov	1	0	0	1		0	0	0	0	1	1	0	2		0	0	0	0
19-Nov	1	1	0	2		0	0	0	0	0	3	0	3		0	0	0	0
23-Nov	1	0	0	1		0	0	0	0	12	12	0	24		1	0	0	1
Total	27	34	0	61		1	1	0	2	156	157	0	313		12	7	0	19

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 19 - 05. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 2005.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
17-Oct	1	2	0	3		0	0	0	0	0	4	0	4		0	0	0	0
21-Oct	0	4	0	4		0	0	0	0	3	9	0	12		0	0	0	0
25-Oct	6	4	0	10		0	0	0	0	2	3	0	5		0	0	0	0
26-Oct	0	0	0	0		0	0	0	0	11	11	0	22		0	0	0	0
28-Oct	4	5	0	9		0	0	0	0	7	6	0	13		0	1	0	1
1-Nov	2	4	0	6		0	0	0	0	14	11	0	25		0	1	0	1
4-Nov	2	3	0	5		1	0	0	1	15	15	0	30		0	1	0	1
8-Nov	1	2	0	3		0	0	0	0	6	1	0	7		0	1	0	1
10-Nov	0	0	0	0		0	0	0	0	9	4	0	13		0	1	0	1
11-Nov	0	0	0	0		0	0	0	0	2	2	0	4		0	0	0	0
15-Nov	0	0	0	0		0	0	0	0	4	0	0	4		0	0	0	0
18-Nov	0	0	0	0		0	0	0	0	7	5	0	12		0	0	0	0
22-Nov	0	0	0	0		0	0	0	0	2	0	0	2		0	0	0	0
Total	16	24	0	40		1	0	0	1	82	71	0	153		0	5	0	5

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 19 - 06. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 2006.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
16-Oct	0	1	0	1		0	0	0	0	0	0	0	0		0	0	0	0
18-Oct	0	1	0	1		0	0	0	0	0	2	0	2		0	0	0	0
20-Oct	0	0	0	0		0	0	0	0	1	1	0	2		0	0	0	0
24-Oct	4	6	0	10		0	0	0	0	6	11	0	17		0	0	0	0
26-Oct	2	2	0	4		0	0	0	0	3	5	0	8		0	0	0	0
27-Oct	0	0	0	0		0	0	0	0	12	9	0	21		1	0	0	1
31-Oct	5	14	0	19		1	0	0	1	12	17	0	29		0	1	0	1
1-Nov	0	0	0	0		0	0	0	0	23	43	0	66		2	1	0	3
3-Nov	7	9	0	16		0	1	0	1	30	50	0	80		1	1	0	2
7-Nov	9	16	0	25		0	0	0	0	31	22	0	53		1	1	0	2
8-Nov	0	0	0	0		0	0	0	0	3	8	0	11		0	0	0	0
10-Nov	0	4	0	4		0	0	0	0	4	3	0	7		0	1	0	1
14-Nov	1	12	0	13		0	2	0	2	34	34	0	68		5	0	0	5
16-Nov	0	0	0	0		0	0	0	0	12	6	0	18		1	0	0	1
17-Nov	4	2	0	6		0	0	0	0	4	2	0	6		2	0	0	2
21-Nov	1	1	0	2		0	0	0	0	1	1	0	2		0	0	0	0
22-Nov	0	0	0	0		0	0	0	0	11	10	0	21		0	1	0	1
24-Nov	0	0	0	0		0	0	0	0	1	5	0	6		0	0	0	0
Total	33	68	0	101		1	3	0	4	188	229	0	417		13	6	0	19

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 19 - 07. Total dead recovery and adipose clip recovery of Chinook salmon in the Campbell River, 2007.

	Area 1A (a)									Area 1B (a)							
	New Examined					Adipose Clipped Recoveries				New Examined					Adipose Clipped Recoveries		
Date	M	F	J	T		M	F	J	T	M	F	J	T		M	F	J	T
16-Oct	0	3	0	3		0	1	0	1	0	1	0	1		0	0	0	0
19-Oct	1	3	0	4		0	0	0	0	2	4	0	6		0	0	0	0
23-Oct	3	4	0	7		0	0	0	0	8	7	0	15		1	0	0	1
24-Oct	0	0	0	0		0	0	0	0	10	7	0	17		2	0	0	2
26-Oct	7	4	0	11		0	0	0	0	14	17	0	31		3	0	0	3
30-Oct	2	8	0	10		0	0	0	0	20	16	0	36		0	0	0	0
2-Nov	4	6	0	10		0	0	0	0	9	9	0	18		0	0	0	0
6-Nov	1	6	0	7		0	0	0	0	11	11	0	22		0	2	0	2
9-Nov	2	1	0	3		0	0	0	0	3	5	0	8		0	0	0	0
15-Nov	0	0	0	0		0	0	0	0	1	0	0	1		0	0	0	0
23-Nov	1	1	0	2		0	0	0	0	4	5	0	9		0	0	0	0
Total	21	36	0	57		0	1	0	1	82	82	0	164		6	2	0	8

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 99. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 1999.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
26-Oct	0	5	0	5	0	0	0	0	1	4	0	5	0	0	0	0	0	0	0	0	0	0	0	0
27-Oct	0	0	0	0	0	0	0	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0
29-Oct	1	3	0	4	0	0	0	0	1	2	0	3	0	0	0	0	0	2	0	2	0	0	0	0
2-Nov	1	2	0	3	0	0	0	0	1	7	0	8	0	0	0	0	0	1	0	1	0	0	0	0
3-Nov	0	0	0	0	0	0	0	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0
9-Nov	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Nov	1	4	0	5	0	0	0	0	0	5	0	5	0	1	0	1	0	0	0	0	0	0	0	0
12-Nov	2	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16-Nov	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19-Nov	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0
23-Nov	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7	22	0	29	0	0	0	0	9	25	0	34	0	1	0	1	0	3	0	3	0	0	0	0

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 00. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 2000.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
24-Oct	0	3	0	3	0	0	0	0	2	2	0	4	0	0	0	0	1	0	0	1	0	0	0	0
25-Oct	0	0	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	1	0	1	0	0	0	0
27-Oct	1	1	0	2	0	0	0	0	1	6	0	7	0	1	0	1	0	0	0	0	0	0	0	0
31-Oct	1	4	0	5	0	0	0	0	9	7	0	16	1	0	0	1	0	0	0	0	0	0	0	0
1-Nov	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3-Nov	0	0	0	0	0	0	0	0	0	4	0	4	0	1	0	1	0	0	0	0	0	0	0	0
7-Nov	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
14-Nov	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	9	0	12	0	0	0	0	16	21	0	37	1	2	0	3	1	1	0	2	0	0	0	0

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 01. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 2001.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
23-Oct	3	6	0	9	0	0	0	0	2	7	0	9	0	0	0	0	0	0	0	0	0	0	0	0
26-Oct	1	1	0	2	0	0	0	0	3	7	0	10	0	1	0	1	4	2	0	6	0	0	0	0
30-Oct	3	6	0	9	0	0	0	0	5	2	0	7	1	0	0	1	0	0	0	0	0	0	0	0
31-Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0
2-Nov	5	3	0	8	0	0	0	0	2	3	0	5	0	0	0	0	2	1	0	3	0	0	0	0
7-Nov	2	2	0	4	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0
9-Nov	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13-Nov	0	0	0	0	0	0	0	0	1	1	0	2	0	1	0	1	0	0	0	0	0	0	0	0
Total	14	20	0	34	0	0	0	0	13	21	0	34	1	3	0	4	8	4	0	12	0	0	0	0

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 02. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 2002.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
18-Oct	1	2	0	3	0	0	0	0	2	3	0	5	0	0	0	0	1	0	0	1	1	0	0	1
22-Oct	5	4	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23-Oct	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
25-Oct	5	6	0	11	0	0	0	0	11	10	0	21	1	0	0	1	2	0	0	2	0	0	0	0
29-Oct	2	6	0	8	0	0	0	0	13	8	0	21	0	0	0	0	0	0	0	0	0	0	0	0
1-Nov	4	10	0	14	0	0	0	0	6	3	0	9	0	0	0	0	1	0	0	1	0	0	0	0
5-Nov	2	5	0	7	0	0	0	0	9	9	0	18	1	0	0	1	1	0	0	1	0	0	0	0
6-Nov	1	5	0	6	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0
13-Nov	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-Nov	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29-Nov	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Total	22	44	0	66	0	0	0	0	42	37	0	79	2	0	0	2	5	1	0	6	1	1	0	2

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 03. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 2003.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
24-Oct	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
29-Oct	1	1	0	2	0	0	0	0	2	3	0	5	0	0	0	0	0	3	0	3	0	0	0	0
31-Oct	3	7	0	10	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	5	0	0	0	0
3-Nov	0	0	0	0	0	0	0	0	2	5	0	7	0	0	0	0	0	0	0	0	0	0	0	0
7-Nov	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Nov	0	0	0	0	0	0	0	0	1	3	0	4	0	0	0	0	0	1	0	1	0	0	0	0
Total	5	10	0	15	0	0	0	0	5	13	0	18	0	0	0	0	3	6	0	9	0	0	0	0

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 04. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 2004.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
15-Oct	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
22-Oct	0	3	0	3	0	0	0	0	3	1	0	4	0	1	0	1	0	0	0	0	0	0	0	0
26-Oct	3	8	0	11	0	0	0	0	5	6	0	11	0	1	0	1	0	1	0	1	0	0	0	0
29-Oct	1	1	0	2	0	0	0	0	5	4	0	9	0	0	0	0	0	0	0	0	0	0	0	0
3-Nov	0	3	0	3	0	0	0	0	4	4	0	8	0	1	0	1	1	2	0	3	0	0	0	0
8-Nov	1	0	0	1	0	0	0	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0
Total	5	15	0	20	0	0	0	0	21	16	0	37	0	3	0	3	1	3	0	4	0	0	0	0

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 05. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 2005.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
21-Oct	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
25-Oct	1	2	0	3	0	0	0	0	2	2	0	4	0	0	0	0	0	1	0	1	0	0	0	0
28-Oct	0	1	0	1	0	0	0	0	4	2	0	6	0	0	0	0	2	1	0	3	0	0	0	0
1-Nov	1	1	0	2	0	0	0	0	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0
4-Nov	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
11-Nov	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	4	0	6	0	0	0	0	9	6	0	15	0	0	0	0	3	3	0	6	0	0	0	0

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 06. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 2006.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
18-Oct	0	1	0	1	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
23-Oct	1	8	0	9	0	0	0	0	2	3	0	5	1	0	0	1	0	0	0	0	0	0	0	0
26-Oct	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0
31-Oct	2	5	0	7	0	0	0	0	4	6	0	10	0	0	0	0	1	1	0	2	0	0	0	0
1-Nov	0	2	0	2	0	0	0	0	6	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0
3-Nov	1	6	0	7	0	0	0	0	2	5	0	7	0	0	0	0	0	0	0	0	0	0	0	0
7-Nov	1	6	0	7	0	0	0	0	4	3	0	7	0	0	0	0	4	3	0	7	0	0	0	0
8-Nov	2	6	0	8	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0
10-Nov	0	1	0	1	0	0	0	0	4	5	0	9	0	0	0	0	0	0	0	0	0	0	0	0
14-Nov	1	0	0	1	0	0	0	0	4	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0
17-Nov	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0
24-Nov	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	8	41	0	49	0	0	0	0	27	36	0	63	1	1	0	2	6	5	0	11	0	0	0	0

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 20 - 07. Total dead recovery and adipose clip recovery of Chinook salmon in the Second Island Channel (on the Campbell River), 2007.

	Channel A (a)								Channel B (a)								Channel C (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
16-Oct	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
19-Oct	0	2	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
23-Oct	0	4	0	4	0	0	0	0	1	5	0	6	0	1	0	1	0	0	0	0	0	0	0	0
26-Oct	1	0	0	1	0	0	0	0	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0
30-Oct	1	4	0	5	0	0	0	0	2	3	0	5	0	0	0	0	1	0	0	1	0	0	0	0
2-Nov	0	1	0	1	0	0	0	0	2	4	0	6	0	0	0	0	0	2	0	2	0	0	0	0
6-Nov	0	3	0	3	0	0	0	0	3	4	0	7	0	0	0	0	2	2	0	4	0	0	0	0
9-Nov	0	0	0	0	0	0	0	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	15	0	17	0	0	0	0	14	24	0	38	0	1	0	1	3	4	0	7	0	0	0	0

(a) See Figure 2 for location of recovery area (the spawning channel was divided into three sections; Channel A is the top 1/3, Channel B is the middle 1/3, and Channel C is the bottom 1/3 of the channel length).
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 99. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 1999.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
18-Oct	1	1	0	2	0	0	0	0	1	1	0	2	1	0	0	1	0	0	0	0	0	0	0	0
19-Oct	0	0	0	0	0	0	0	0	3	9	0	12	0	0	0	0	2	1	0	3	0	0	0	0
21-Oct	1	2	0	3	0	0	0	0	3	1	0	4	0	0	0	0	6	11	0	17	0	0	0	0
25-Oct	2	0	0	2	0	0	0	0	4	4	0	8	0	0	0	0	14	9	0	23	3	0	0	3
28-Oct	6	5	0	11	0	0	0	0	2	3	0	5	0	0	0	0	8	5	0	13	0	0	0	0
1-Nov	3	7	0	10	0	0	0	0	7	14	0	21	1	0	0	1	36	37	2	75	2	0	0	2
4-Nov	20	36	0	56	1	0	0	1	22	19	1	42	1	0	0	1	18	22	1	41	1	0	0	1
8-Nov	14	25	0	39	0	0	0	0	17	18	3	38	1	0	0	1	15	12	0	27	0	0	0	0
10-Nov	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
11-Nov	4	10	0	14	1	0	0	1	5	7	1	13	0	0	0	0	27	9	0	36	1	0	0	1
15-Nov	17	22	0	39	2	0	0	2	21	20	0	41	2	0	0	2	35	24	0	59	2	0	0	2
18-Nov	7	9	0	16	0	0	0	0	12	10	0	22	1	0	0	1	26	11	0	37	0	0	0	0
22-Nov	14	8	0	22	1	0	0	1	9	13	0	22	1	0	0	1	19	16	0	35	1	0	0	1
25-Nov	5	6	0	11	0	0	0	0	10	4	0	14	1	0	0	1	14	7	0	21	0	0	0	0
29-Nov	2	1	0	3	0	0	0	0	3	1	0	4	0	0	0	0	5	2	0	7	0	0	0	0
2-Dec	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	1	0	0	1	0	0	0	0
Total	96	132	0	228	5	0	0	5	122	125	5	252	9	0	0	9	226	166	3	395	10	0	0	10

(a) See Figure 2 for location of recovery areas.
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 00. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 2000.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
23-Oct	3	0	0	3	0	0	0	0	3	1	0	4	0	1	0	1	5	1	0	6	1	0	0	1
25-Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9	0	12	1	3	0	4
26-Oct	21	20	0	41	3	1	0	4	10	5	0	15	0	1	0	1	17	16	0	33	1	2	0	3
30-Oct	60	70	2	132	2	3	0	5	39	49	3	91	3	5	0	8	6	13	0	19	0	0	0	0
1-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	46	0	82	4	5	0	9
2-Nov	70	96	0	166	5	15	0	20	67	75	0	142	2	5	0	7	21	22	0	43	2	1	0	3
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8	0	14	0	1	0	1
6-Nov	134	188	0	322	5	17	0	22	40	45	0	85	3	5	0	8	59	53	5	117	6	5	0	11
7-Nov	0	0	0	0	0	0	0	0	59	78	0	137	6	8	0	14	0	0	0	0	0	0	0	0
9-Nov	123	152	0	275	10	15	0	25	33	46	0	79	3	6	0	9	52	48	0	100	3	5	0	8
13-Nov	62	100	0	162	6	11	0	17	20	26	0	46	2	2	0	4	6	12	0	18	1	1	0	2
14-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	13	0	33	1	2	0	3
16-Nov	47	61	0	108	3	2	0	5	16	19	0	35	1	2	0	3	33	31	0	64	1	4	0	5
20-Nov	32	34	1	67	1	3	0	4	10	15	0	25	2	1	0	3	3	1	0	4	2	0	0	2
23-Nov	18	21	1	40	0	1	0	1	4	5	0	9	0	0	0	0	4	1	0	5	0	0	0	0
27-Nov	11	11	0	22	1	0	0	1	2	5	0	7	0	0	0	0	1	4	0	5	0	1	0	1
30-Nov	7	5	0	12	0	0	0	0	4	4	0	8	0	0	0	0	2	1	0	3	0	0	0	0
Total	588	758	4	1,350	36	68	0	104	307	373	3	683	22	36	0	58	274	279	5	558	23	30	0	53

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 01. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 2001.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
19-Oct	13	20	0	33	0	2	0	2	2	6	0	8	0	1	0	1	22	22	0	44	4	3	0	7
22-Oct	21	58	3	82	1	3	0	4	16	10	0	26	1	1	0	2	10	6	0	16	1	0	0	1
24-Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	59	0	116	3	2	0	5
25-Oct	103	116	0	219	9	7	0	16	34	40	0	74	4	3	0	7	20	16	0	36	1	3	0	4
26-Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	24	0	64	5	1	0	6
29-Oct	98	119	0	217	11	12	0	23	74	76	0	150	4	13	0	17	44	35	0	79	6	4	0	10
30-Oct	0	0	0	0	0	0	0	0	56	66	0	122	4	7	0	11	81	73	0	154	3	11	0	14
31-Oct	73	83	0	156	9	8	0	17	9	16	0	25	0	3	0	3	0	0	0	0	0	0	0	0
1-Nov	64	97	0	161	6	14	0	20	84	96	0	180	7	11	0	18	109	69	0	178	7	6	0	13
2-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	12	0	28	0	3	0	3
5-Nov	284	335	0	619	22	39	0	61	0	0	0	0	0	0	0	0	50	35	1	86	5	2	0	7
6-Nov	96	109	0	205	6	10	0	16	185	170	0	355	14	21	0	35	141	89	3	233	8	15	0	23
7-Nov	75	92	1	168	12	8	0	20	0	0	0	0	0	0	0	0	45	36	0	81	2	6	0	8
8-Nov	59	71	0	130	8	7	0	15	131	127	0	258	8	12	0	20	100	53	1	154	8	7	1	16
9-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	3	14	0	2	1	3
12-Nov	221	183	1	405	13	23	0	36	84	82	0	166	11	8	0	19	0	0	0	0	0	0	0	0
13-Nov	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	120	66	0	186	6	3	0	9
14-Nov	56	51	0	107	5	7	0	12	5	9	0	14	0	1	0	1	0	0	0	0	0	0	0	0
15-Nov	0	0	0	0	0	0	0	0	4	1	0	5	1	0	0	1	20	7	0	27	2	0	0	2
19-Nov	31	42	0	73	2	2	0	4	29	23	0	52	2	2	0	4	16	12	0	28	0	1	0	1
27-Nov	16	19	0	35	0	1	0	1	14	8	0	22	0	0	0	0	19	16	0	35	2	1	0	3
29-Nov	4	2	0	6	0	0	0	0	5	3	0	8	0	0	0	0	8	5	0	13	0	0	0	0
Total	1,214	1,397	5	2,616	104	143	0	247	734	734	0	1,468	56	83	0	139	923	641	8	1,572	63	70	2	135

(a) See Figure 2 for location of recovery areas.

(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)

(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 02. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 2002.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
15-Oct	0	0	0	0	0	0	0	0	3	2	0	5	1	0	0	1	4	3	0	7	0	0	0	0
17-Oct	4	4	0	8	0	1	0	1	2	8	1	11	0	0	0	0	8	6	0	14	0	0	0	0
21-Oct	35	32	0	67	2	6	0	8	18	31	0	49	1	6	0	7	0	0	0	0	0	0	0	0
22-Oct	0	0	0	0	0	0	0	0	19	30	0	49	2	0	0	2	53	97	1	151	3	8	0	11
23-Oct	42	65	0	107	5	8	0	13	34	43	0	77	1	3	0	4	0	0	0	0	0	0	0	0
24-Oct	0	1	0	1	0	1	0	1	21	20	0	41	3	1	0	4	57	71	3	131	3	10	0	13
28-Oct	199	350	0	549	14	32	0	46	86	140	0	226	4	8	0	12	126	145	3	274	8	8	0	16
29-Oct	0	0	0	0	0	0	0	0	141	188	0	329	7	16	0	23	0	0	0	0	0	0	0	0
30-Oct	87	156	0	243	7	10	0	17	43	51	0	94	1	3	0	4	0	0	0	0	0	0	0	0
31-Oct	25	26	0	51	0	1	0	1	50	50	0	100	5	6	0	11	118	141	0	259	11	13	0	24
4-Nov	125	278	0	403	13	19	0	32	93	141	0	234	7	16	0	23	160	200	0	360	12	10	0	22
5-Nov	0	0	0	0	0	0	0	0	62	132	0	194	8	10	0	18	0	0	0	0	0	0	0	0
6-Nov	45	97	0	142	4	11	0	15	22	45	1	68	0	3	0	3	0	0	0	0	0	0	0	0
7-Nov	0	0	0	0	0	0	0	0	35	27	0	62	4	3	0	7	92	91	0	183	7	12	0	19
11-Nov	37	78	0	115	6	5	0	11	71	118	0	189	7	8	0	15	14	11	0	25	1	6	0	7
12-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	49	0	104	3	3	0	6
14-Nov	3	28	0	31	0	2	0	2	21	37	0	58	1	0	0	1	27	51	0	78	0	3	0	3
18-Nov	6	10	0	16	0	0	0	0	6	19	0	25	1	0	0	1	23	31	0	54	3	3	0	6
21-Nov	9	12	0	21	0	0	0	0	5	33	0	38	0	0	0	0	35	34	0	69	1	0	0	1
25-Nov	9	27	0	36	1	4	0	5	15	26	0	41	2	0	0	2	16	31	0	47	0	0	0	0
28-Nov	2	4	0	6	0	0	0	0	3	11	0	14	0	0	0	0	7	22	0	29	0	1	0	1
4-Dec	0	6	0	6	0	0	0	0	1	4	0	5	0	0	0	0	4	9	0	13	0	0	0	0
Total	628	1,174	0	1,802	52	100	0	152	751	1,156	2	1,909	55	83	0	138	799	992	7	1,798	52	77	0	129

(a) See Figure 2 for location of recovery areas.
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 03. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 2003.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
20-Oct	1	2	0	3	0	0	0	0	1	0	0	1	0	0	0	0	5	4	0	9	0	0	0	0
21-Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	0	11	0	0	0	0
23-Oct	6	17	0	23	0	3	0	3	4	14	0	18	0	0	0	0	12	45	1	58	2	2	0	4
27-Oct	32	81	0	113	1	4	0	5	25	61	0	86	1	0	0	1	11	21	0	32	0	1	0	1
28-Oct	3	5	0	8	3	5	0	8	0	2	0	2	0	2	0	2	80	124	0	204	3	7	0	10
30-Oct	88	143	0	231	3	10	0	13	69	108	0	177	3	5	0	8	20	28	0	48	0	0	0	0
4-Nov	116	139	0	255	11	10	0	21	49	57	0	106	2	8	0	10	80	80	0	160	5	3	0	8
5-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123	87	0	210	7	2	0	9
12-Nov	29	69	0	98	0	3	0	3	22	15	0	37	2	0	0	2	65	41	0	106	3	3	0	6
13-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	1	13	0	0	0	0
17-Nov	43	29	0	72	2	0	0	2	7	9	0	16	0	0	0	0	25	16	0	41	1	0	0	1
20-Nov	14	13	0	27	0	0	0	0	8	6	0	14	0	0	0	0	23	16	0	39	0	0	0	0
25-Nov	7	3	0	10	1	0	0	1	3	2	0	5	0	0	0	0	12	2	0	14	0	0	0	0
27-Nov	3	1	0	4	0	0	0	0	1	0	0	1	0	0	0	0	5	0	0	5	0	0	0	0
Total	342	502	0	844	21	35	0	56	189	274	0	463	8	15	0	23	471	477	2	950	21	18	0	39

(a) See Figure 2 for location of recovery areas.
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 04. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 2004.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
13-Oct	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	1	4	0	5	0	1	0	1
18-Oct	5	14	1	20	0	0	0	0	5	13	0	18	1	1	0	2	14	33	0	47	1	3	0	4
20-Oct	10	12	0	22	0	0	0	0	6	16	0	22	0	1	0	1	3	6	0	9	0	0	0	0
21-Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	50	0	63	1	7	0	8
25-Oct	27	70	0	97	2	3	0	5	21	47	1	69	3	1	0	4	27	49	0	76	1	2	0	3
27-Oct	22	28	1	51	2	3	0	5	5	19	0	24	0	2	0	2	0	0	0	0	0	0	0	0
28-Oct	0	0	0	0	0	0	0	0	12	22	0	34	1	1	0	2	66	88	0	154	3	5	0	8
1-Nov	95	146	0	241	9	12	0	21	59	91	0	150	5	3	0	8	5	1	0	6	1	0	0	1
2-Nov	0	0	0	0	0	0	0	0	8	17	0	25	0	0	0	0	116	132	0	248	5	10	0	15
4-Nov	74	113	0	187	7	5	0	12	104	90	0	194	5	6	0	11	2	5	0	7	0	1	0	1
5-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	79	0	196	7	3	0	10
9-Nov	34	35	0	69	0	5	0	5	31	25	0	56	4	1	0	5	53	46	0	99	1	2	0	3
11-Nov	10	17	0	27	0	1	0	1	18	19	0	37	1	0	0	1	38	22	0	60	1	2	0	3
12-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0
15-Nov	5	2	0	7	0	0	0	0	6	4	0	10	0	0	0	0	3	2	0	5	0	0	0	0
18-Nov	6	9	0	15	0	0	0	0	1	5	0	6	0	0	0	0	2	1	0	3	0	0	0	0
22-Nov	7	9	0	16	0	0	0	0	16	13	0	29	0	0	0	0	38	30	0	68	3	1	0	4
25-Nov	1	1	0	2	0	0	0	0	3	6	0	9	0	0	0	0	3	3	0	6	0	0	0	0
29-Nov	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	6	7	0	13	1	0	0	1
Total	297	460	2	759	20	29	0	49	295	391	1	687	20	16	0	36	510	559	0	1,069	25	37	0	62

(a) See Figure 2 for location of recovery areas.
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 05. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 2005.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
18-Oct	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1	3	5	0	8	0	0	0	0
20-Oct	6	7	0	13	0	0	0	0	2	4	0	6	0	0	0	0	6	11	0	17	1	0	0	1
24-Oct	16	56	0	72	2	6	0	8	23	64	0	87	2	2	0	4	23	48	0	71	2	6	0	8
25-Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	13	0	30	1	0	0	1
26-Oct	19	30	0	49	1	3	0	4	60	98	1	159	5	4	0	9	13	17	0	30	2	0	0	2
27-Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	41	0	85	3	2	0	5
31-Oct	31	46	1	78	2	1	0	3	34	61	0	95	5	5	0	10	47	56	0	103	10	4	0	14
1-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	8	0	0	0	0
2-Nov	16	35	0	51	0	3	0	3	39	67	0	106	1	2	0	3	38	75	0	113	0	5	0	5
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	19	0	31	0	1	0	1
7-Nov	19	30	0	49	0	1	0	1	37	60	0	97	4	5	0	9	54	86	0	140	1	1	0	2
8-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	8	0	18	1	0	0	1
9-Nov	16	12	0	28	0	0	0	0	13	30	0	43	2	0	0	2	33	37	0	70	3	1	0	4
14-Nov	5	7	0	12	0	1	0	1	3	7	0	10	0	0	0	0	6	10	0	16	0	0	0	0
17-Nov	9	9	0	18	0	0	0	0	6	9	0	15	0	1	0	1	13	18	0	31	1	1	0	2
21-Nov	6	5	0	11	0	0	0	0	8	8	0	16	0	0	0	0	21	20	0	41	0	0	0	0
24-Nov	0	0	0	0	0	0	0	0	1	4	0	5	0	0	0	0	2	4	0	6	0	0	0	0
28-Nov	0	0	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	1	0	1	0	0	0	0
Total	143	238	1	382	5	15	0	20	227	415	1	643	19	20	0	39	345	474	0	819	25	21	0	46

(a) See Figure 2 for location of recovery areas.
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 06. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 2006.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
17-Oct	0	1	0	1	0	0	0	0	1	3	0	4	0	1	0	1	1	5	0	6	0	0	0	0
19-Oct	1	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	1	8	0	9	0	1	0	1
23-Oct	2	14	0	16	0	0	0	0	1	12	0	13	0	0	0	0	6	42	0	48	0	3	0	3
25-Oct	5	14	0	19	1	0	0	1	3	7	0	10	0	1	0	1	12	63	0	75	1	2	0	3
30-Oct	15	40	1	56	0	4	0	4	17	60	1	78	3	6	0	9	47	122	0	169	1	12	0	13
2-Nov	31	49	0	80	1	2	0	3	33	55	1	89	2	9	0	11	53	108	1	162	6	15	0	21
6-Nov	35	53	0	88	4	6	0	10	34	78	0	112	1	5	0	6	68	102	2	172	4	6	0	10
7-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	8	0	0	0	0
9-Nov	42	58	0	100	4	6	0	10	58	92	0	150	3	7	0	10	61	95	1	157	5	8	0	13
10-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	15	0	22	0	1	0	1
13-Nov	32	28	0	60	1	3	0	4	48	58	0	106	2	4	0	6	74	69	0	143	5	3	0	8
14-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	1	25	0	1	0	1
16-Nov	2	8	0	10	0	1	0	1	4	11	0	15	1	1	0	2	1	0	0	1	0	0	0	0
20-Nov	5	2	0	7	0	0	0	0	7	5	0	12	0	0	0	0	23	21	0	44	0	3	0	3
23-Nov	2	2	0	4	0	0	0	0	1	2	0	3	0	0	0	0	4	2	0	6	0	1	0	1
27-Nov	3	3	0	6	0	0	0	0	6	11	0	17	1	1	0	2	16	25	0	41	1	0	0	1
1-Dec	0	2	0	2	0	0	0	0	5	6	0	11	1	0	0	1	12	22	1	35	0	1	0	1
Total	175	274	1	450	11	22	0	33	218	402	2	622	14	35	0	49	401	716	6	1,123	23	57	0	80

(a) See Figure 2 for location of recovery areas.
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total

Appendix 21 - 07. Total dead recovery and adipose clip recovery of Chinook salmon in the Quinsam River, 2007.

	Area 2B (a)								Area 2C (a)								Area 2D (a)							
	New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries				New Examined				Adipose Clipped Recoveries			
Date	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T	M	F	J	T
15-Oct	3	6	0	9	0	0	0	0	3	3	0	6	0	0	0	0	10	8	0	18	0	0	0	0
18-Oct	4	12	0	16	0	1	0	1	2	5	0	7	0	0	0	0	9	18	0	27	1	2	0	3
22-Oct	8	6	0	14	1	0	0	1	8	4	0	12	1	0	0	1	17	23	0	40	0	1	0	1
25-Oct	13	17	0	30	1	0	0	1	7	18	0	25	1	0	0	1	18	35	0	53	1	2	0	3
29-Oct	29	48	0	77	1	2	0	3	10	23	0	33	0	5	0	5	32	49	0	81	4	6	0	10
1-Nov	19	54	0	73	3	3	0	6	15	34	0	49	0	2	0	2	25	32	2	59	2	2	0	4
5-Nov	23	39	0	62	0	2	0	2	10	20	1	31	0	2	0	2	24	43	0	67	0	3	0	3
8-Nov	11	33	0	44	1	0	0	1	4	19	0	23	0	1	0	1	10	15	0	25	0	1	0	1
13-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0
16-Nov	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19-Nov	4	4	0	8	0	0	0	0	0	1	0	1	0	0	0	0	9	14	0	23	0	2	0	2
22-Nov	2	2	0	4	0	0	0	0	2	1	0	3	1	0	0	1	5	2	0	7	0	0	0	0
26-Nov	2	1	0	3	0	0	0	0	0	1	0	1	0	0	0	0	2	5	0	7	0	0	0	0
29-Nov	1	1	0	2	0	0	0	0	2	0	0	2	1	0	0	1	0	1	0	1	0	0	0	0
Total	120	224	0	344	7	8	0	15	63	129	1	193	4	10	0	14	163	245	2	410	8	19	0	27

(a) See Figure 2 for location of recovery areas.
(b) New Examined = Untagged carcass recoveries (includes adipose clip recoveries)
(c) Abbreviations are: M = Male, F = Female, J = Jack, T = Total